

Social and gender analysis report: Barotse Floodplain, Western Province, Zambia



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SOCIAL AND GENDER ANALYSIS REPORT: BAROTSE FLOODPLAIN, WESTERN PROVINCE, ZAMBIA

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INTRODUCTION

There is increasing awareness that integrating gender into development frameworks is critical for effective implementation of development strategies. In working to alleviate rural poverty, the CGIAR Research Program on Aquatic Agricultural Systems (AAS) recognizes that “business as usual” gender integration approaches will not deliver lasting and widespread improvements in agricultural productivity, poverty reduction and food security. In response, AAS operationalized a gender transformative approach (see Cole et al. 2014a, 2014b). The approach is informed by conceptual frameworks that explicitly recognize the potent influence of social relations on creating and perpetuating gender inequalities (Kabeer 1994; Locke and Okali 1999). In this way, AAS aims to address the underlying causes of rural poverty and gender inequality in Zambia’s Barotse Floodplain, where people rely extensively on riverine and wetland ecosystems for food and livelihood security.

A central question guiding the research program is “How do social norms and gendered power relations influence agricultural development outcomes?” The findings presented in this report provide insights that help answer this question. The report presents a review of literature relevant to livelihoods, ecosystem services, and gender and social relations in Zambia, with a specific focus on Western Province, where AAS is currently implemented. It also presents a synthesis of findings of a social and gender analysis conducted in 2013 in 10 focal communities situated in and around the Barotse Floodplain. The findings of this study are intended to inform the design of combinations of agricultural and transformative development interventions to foster lasting changes in gender relations across diverse social groups. The findings also provide contextual and baseline data for ongoing monitoring of the processes that underlie these changes. Ultimately, AAS seeks to assess how these transformative changes contribute to agricultural development outcomes, such as poverty reduction and food and nutrition security, through its monitoring and evaluation system that fosters learning in action.

AAS AND THE GENDER TRANSFORMATIVE APPROACH

This section summarizes the rationale for the social and gender analysis in Zambia's Barotse Floodplain. It begins by broadly describing AAS, and then details the program's gender transformative approach, with mention of the core research questions that guided the development of the social and gender analysis.

AAS

Based on the belief that new approaches to agricultural research are needed if sustainable improvements in agricultural productivity, poverty reduction and food security are to be achieved, AAS embraces an approach that ensures science and innovation are specifically designed and implemented to address the needs of the resource-poor. Working with traditional authorities, governments, regional organizations and civil society groups, AAS seeks to help foster changes in the policy, legal and regulatory environment of aquatic agricultural systems. AAS improves gender equality by identifying existing barriers and opportunities and then supporting policies and institutional reforms that promote more equal access to resources.

While agricultural development efforts have been reasonably successful in improving the availability of resources and technologies in low-income countries, they have been less effective in overcoming (or even recognizing) the social constraints that make it difficult for marginalized groups to use resources and technologies to their own and the sector's benefit. This blind spot in conventional agricultural development efforts means that agricultural innovations often fail to achieve lasting material advantages for the resource-poor and may actually reinforce prevailing disadvantages (Kantor 2013).

As of 2014, AAS conducted research in Bangladesh, Cambodia, the Philippines, Solomon Islands and Zambia. At the country level, AAS is carried out in learning hubs,¹ which are located in areas where dependence on aquatic agricultural systems for livelihoods is high.² AAS works with key stakeholders in each hub to form a compelling development

challenge facing people in the aquatic agricultural system. AAS and stakeholders then identify priority areas for research and the interventions required to address the challenge. The research focuses on developing, testing and adapting technical, institutional and policy interventions. The program is led by WorldFish, in partnership with the International Water Management Institute (IWMI) and Bioversity International.³

To guide its interventions in alignment with the intended development outcomes, AAS actively pursues a research-in-development approach that emphasizes embedding research in the development context. This approach, illustrated in Figure 1, prioritizes commitment to people and place (including conducting longer-term research in hubs; i.e. at least 10 years), participatory action research, a gender transformative approach, and learning and networking through effective partnerships and strengthened capacities to achieve and measure impact at scale (Dugan et al. 2013; Cole et al. 2014a).

AAS in Zambia. AAS in Zambia is carrying out research activities in the Barotse Floodplain in Western Province, one of the largest wetland systems in Zambia and home to about 250,000 people. To help achieve impact, the program collaborates with a diverse group of partners, such as the Ministry of Agriculture and Livestock (including the Department of Fisheries), Barotse Royal Establishment, Peoples' Participation Service, Caritas-Mongu, Catholic Relief Services, and Concern Worldwide.⁴

Working with its partners, AAS adopts a community-driven approach that identifies a development challenge or opportunity, creates action plans around people's strengths, and designs research that informs the development of locally salient interventions to help people tackle constraints in and around the floodplain. Through extensive consultations, stakeholders developed the following hub development challenge: "to make more effective use of the seasonal flooding and natural resources in the Barotse Floodplain System through more productive and diversified aquatic agricultural

management practices and technologies that improve lives and livelihoods of the poor.”⁵ The process of identifying the Barotse hub development challenge galvanized stakeholder commitment to tackling development challenges in the Barotse Floodplain,⁶ with the goal of increasing household incomes and sustainable food security throughout the floodplain. Stakeholders identified specific areas of intervention that included promoting more equitable and resilient value chains; improving water management for multiple uses and to reduce flood risks; sustainably increasing farm productivity and diversification; and improving health outcomes. Gender is integral to all of these areas of intervention, and the gender transformative approach is at the core of achieving the hub development challenge (Cole et al. 2014a, 2014b).

The gender transformative approach

The gender transformative approach moves beyond improving women’s access to resources. It seeks to achieve enduring change by engaging people in comprehending and challenging the harmful social norms and power relations that perpetuate inequalities between women and men. Such change requires a sound, in-depth understanding of the social and gender context and prioritizes participatory processes. In Zambia and elsewhere, the gender transformative approach is a core element of research in development and guides AAS implementation. Figure 2

illustrates how the gender transformative approach is embedded in the research-in-development process (Puskur 2014). Gender is incorporated into research plans from the beginning to facilitate lasting improvements in agricultural development and food security. The approach employs participatory action research to create spaces for women and men to critically reflect upon underlying social norms and power relations in their households and communities. This reflection fosters opportunities to shift mindsets and practices and facilitate institutional change for more gender-equitable development outcomes (Kantor 2013; Cole et al. 2014a).

Background to AAS social and gender analysis. AAS recognizes that gender and social inequalities underlie and exacerbate poverty, food insecurity, malnutrition and natural resource degradation (Sarapura Escobar and Puskur 2014).⁷ In keeping with the AAS commitment to address and integrate gender equality, the program led a rapid gender situational analysis in 4 of the 10 focal communities in the Barotse Floodplain (Kwashimbisa and Puskur 2014). The analysis employed a qualitative research design, using focus group discussions to broadly identify social groups and enhance the understanding of gender and social differences, gendered livelihood activities, and some of the norms, beliefs and customs common to the sample communities. The analysis revealed the complexities that exist in the Barotse Floodplain

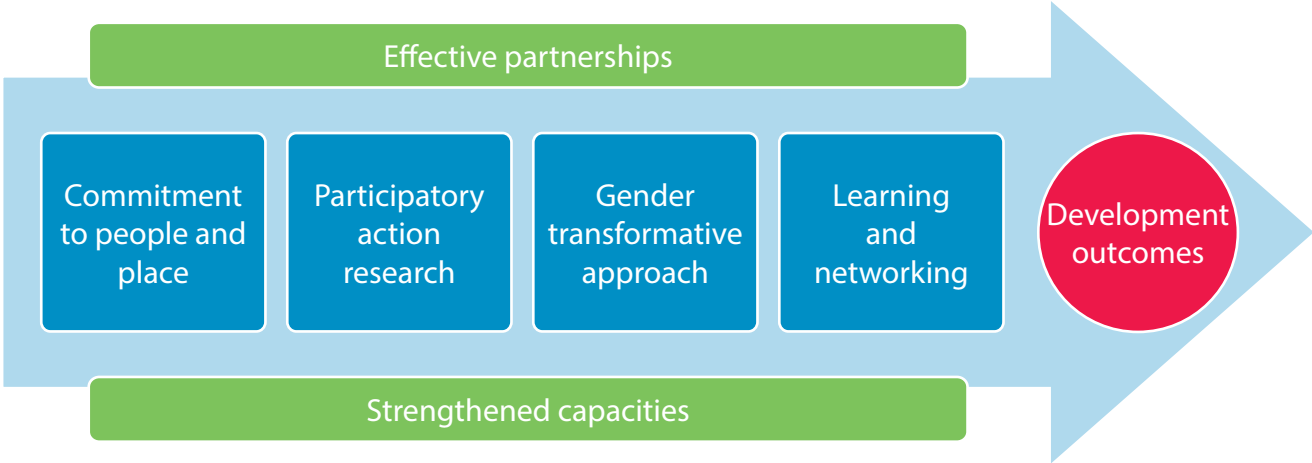


Figure 1. AAS research-in-development approach.

regarding access to land and labor and other factors that limit women's abilities to carry out their livelihoods. The study also highlighted changes in social and economic conditions in the floodplain, such as an increase in the prevalence of divorce, increasing opportunities for girls to attend school, and a loss of critical natural resources due to an increase in population density.

The rapid gender analysis identified a set of parameters that influences gendered dynamics and norms at play in the Barotse Floodplain and highlighted the need for in-depth analysis across the focal communities. The study identified a diversity of household types, including woman- or man-headed and polygynous. An understanding of the variation in resources and social networks accessible to different types of households has important implications for the design of inclusive interventions in the focal communities. The rapid assessment also focused on on-farm versus off-farm activities and highlighted the need to expand the inquiry to account for the range of livelihood choices women and men have in and around the floodplain, as such opportunities shape gender relations, women's mobility, household food security and poverty levels.

There was also a need to better comprehend the social and material resources available to different groups. Specifically, what resources are available in each community, which

social groups have more access to and control over resources, and how do different groups gain access to resources? Where can different groups move about safely and have unrestricted access? What places are off limits to certain groups? Who participates in resource management, and how are decisions made and disputes resolved?

Seasonality was identified as another key consideration that called for further investigation, specifically around variation in food, nutrition and economic security, labor supply and demand, social events, and livelihood activities across the dry and rainy seasons. Critically, decision-making processes or involvement in casual labor may be highly gendered during the rainy or cultivation (or "hungry") season due in part to food and cash shortages, while such circumstances typically improve for most people during the harvest (or dry) season. Investigating whether such seasonal variation in practice exists (and for whom) could enable a better examination of the relationships among gender inequality, poverty and vulnerability and how different groups of people move in and out of poverty.

Finally, a thorough literature review of the historical and contemporary social and gender context in the Barotse Floodplain, which entails tracing processes of gender and social change in the past to better understand the emergence of the current social context, was conducted.

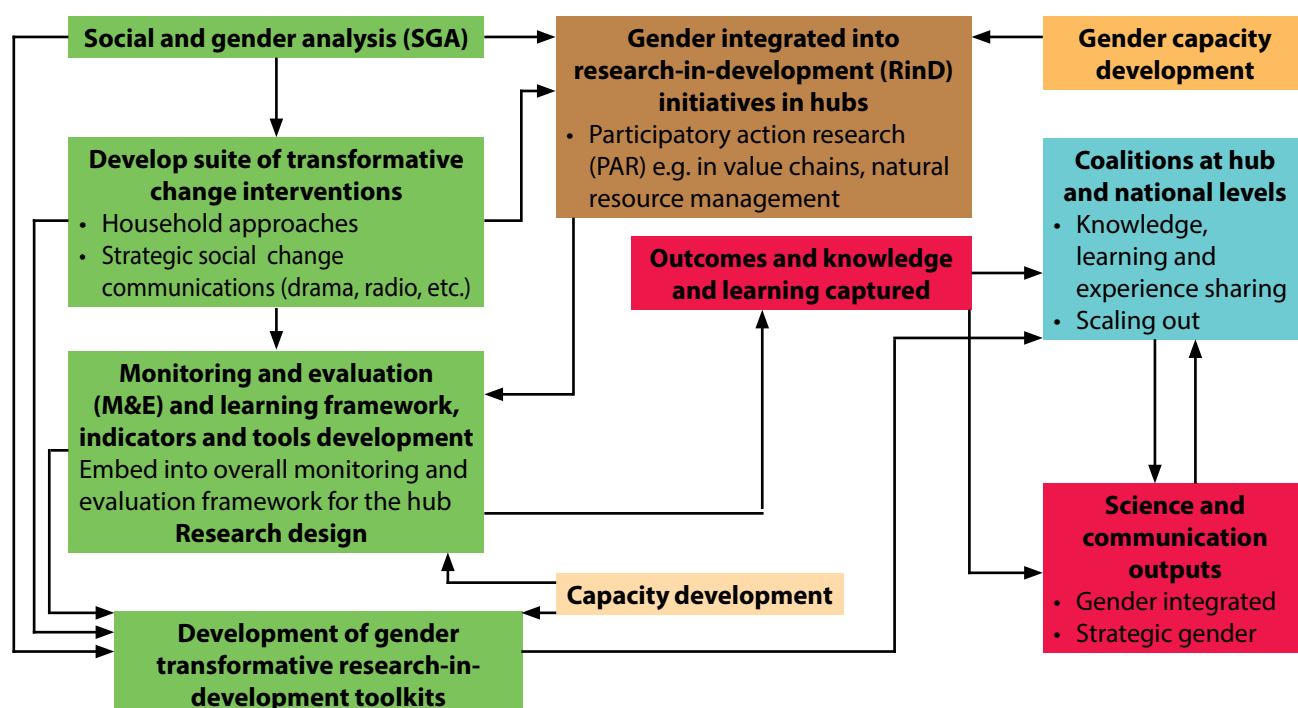


Figure 2. Gender transformative research in development.

CONTEXTUAL REVIEW: ZAMBIA AND THE BAROTSE FLOODPLAIN OF WESTERN PROVINCE

Demography and economy

The Republic of Zambia is a land-locked country located in south-central Africa and bordered by the Democratic Republic of Congo, Tanzania, Malawi, Mozambique, Zimbabwe, Botswana, Namibia and Angola. More than 13 million people live in Zambia.^{8,9} This represents an increase of more than 30% since the 2000 census, which estimated Zambia's population at 9.9 million. From 2000 to 2010, the population of Zambia grew at a rate of 2.8%, with the highest rate of growth in urban areas, and specifically in Lusaka Province. More than 1.7 million people live in the national capital of Lusaka, representing 12% of the total population. Western Province is home to around 903,000 people, an increase from 2000 census data indicating a provincial population of 765,088.¹⁰ In 1990, the population census recorded nearly 607,000 people in Western Province (CSO 1995). Presently, as in the 1990 census, more than 45% of the population is under the age of 15, while individuals between 15 and 64 years of age comprise half of the population (50.8%). While overall population density is around 17 people per square kilometer, density varies dramatically between urban and rural provinces, ranging from 100 people per square kilometer in Lusaka, to around 6 and 7 people per square kilometer in Northwestern and Western Provinces, respectively. The average household size in Zambia is 5.2, with 5.4 for man-headed households and 4.4 for woman-headed households. Census data for Western Province is similar to that of Zambia overall: average household size is 5.0, with 5.4 for man-headed households and 4.3 for woman-headed households.

Zambia has one of the highest poverty rates in sub-Saharan Africa. The World Bank estimates that in 2010, 60% of people in Zambia—or 8.8 million people—were living in poverty, with 42% experiencing extreme poverty such that they were unable to meet their daily consumption needs (De la Fuente et al. 2015). The highest rates of poverty

are found in rural areas, where subsistence agriculture, minimal access to credit, and poor infrastructure (e.g. roads and markets) prevent people from increasing productivity, whether in agriculture or livestock, aquaculture, or off-farm enterprises. Poverty indicators show that Western Province is one of the poorest provinces in Zambia, with a staggering 80% of people living in poverty and 60% experiencing extreme poverty. In 2010, the average annual income in Zambia was around USD 3200,¹¹ with high income inequality that has increased over the past decade (World Bank 2015a).¹² In comparison with other countries, Zambia's employed population supports a relatively high number of nonworking people. When last measured in 2014, the age dependency ratio in Zambia was 96 (World Bank 2015a).¹³

Much of the Zambian economy relies on mining, agriculture, construction, transport and communication sectors for foreign exchange and employment. Mining represents the most substantial industry in the country, as Zambia is the largest producer of copper in Africa and an exporter of a number of other minerals. Western Province, however, lacks sizeable mineral deposits that could be used to generate income and support employment. Throughout Zambia, significant livelihood opportunities derive from subsistence and commercial agriculture. The main crops are maize, sweet potato, cassava, wheat, groundnuts, soya beans and sugar cane (FAO 2012; ZVAC 2012).

Situating the Barotse Floodplain

The Barotse Floodplain occupies the central landscape of Western Province, covering an area of 550,000 square kilometers. The floodplain is one of sub-Saharan Africa's critical aquatic agricultural systems, where 57% (equivalent to 47 million people) of the region's people who depend on these systems are estimated to be resource-poor (Béné and Teoh, personal communication, 2014). Mongu is the provincial capital (see Map 1). When combined with the drainage areas of Lungwebungu, Luena Flats, the Luanginga River and Liuwa Plains

National Park, the wetland extends to an area of 1,196,000 square kilometers (Turpie et al. 1999). These wetlands form the basis of social, cultural and economic activity in the province. Ecologically, the area is home to a diverse array of terrestrial and aquatic life and is divided into two main land units: uplands and lowlands. In the lowlands, the Zambezi River is the predominant feature. The river's annual flood cycle governs the ecological and human activities of the area. Flooding typically occurs between November and June at depths of 1.5 to 3 meters. Annual floods deposit essential nutrients to otherwise nutrient-deficient Kalahari sand soil (Aregheore 2009). During the dry season, agricultural production occurs in conjunction with cattle grazing in the lowland grasslands of the floodplain (Concern Worldwide 2008). The upland zone features forested woodlands, most commonly used for cattle grazing during the annual flooding of the lowlands. The nutrient-poor soils of the uplands limit potential for agricultural production.

Socio-cultural context

Lozi are among the 25 ethnic groups currently residing in Western Province and are the dominant cultural and language group (Gluckman 1967; Flint 2003, 2006).¹⁴ Historically, power within the Lozi kingdom has centered on succession to the throne of the *Litunga* (The President of Zambia, the King of Jordan, etc). As Caplan (1970) observed, this has in effect created highly centralized political and cultural systems, codified as the Barotse Royal Establishment. The *Litunga* heads the Barotse Royal Establishment and administers a governance structure parallel to that of the national government, complete with judicial and bureaucratic regimes. Assisting the *Litunga* are *silalo indunas*, who generally operate at the district level and can be compared to senior chiefs in other areas of the country. Village-level *indunas* administer on behalf of the Barotse Royal Establishment at the local level, most often carrying out the functions of land distribution, dispute resolution and granting access to natural resources.



Map 1. Provinces with their capitals and national capital in Zambia.

The current governance system developed partially as a result of the Barotseland Agreement of 1964, which grants the *Litunga* of Barotseland (now Western Province) broad authority over administrative and cultural aspects of the province. The *Litunga* also governs and administers land, waterways and natural resources throughout the province.¹⁵ The breadth of this authority is somewhat unique in Zambia, in that no other traditional leaders have retained such influence within their chiefdoms or been allowed to retain traditional titles of king.¹⁶

Despite holding significant leadership roles in the past, few women occupy traditional leadership positions within the Barotse Royal Establishment structure today. The queen and a number of princesses play important roles in cultural ceremonies such as *Kuomboka*, which is held annually at the beginning of the flood season to mark the departure of the *Litunga* from his residence in the floodplain (Lealui) for the upland palace in Limulunga. Large numbers

of international tourists and Zambians attend the ceremony each year, and the event has become a significant opportunity for economic exchange and income generation for people in Mongu and neighboring districts (Deneut et al. 2014).

Natural resources

Land

The Zambia Lands Act of 1995 initiated a dual tenure system, which classifies land as either state-owned or customary. The original intent of the act was to promote a transfer of “customarily” owned land to state-registered “titled” ownership (Brown 2005; Malambo 2014). The process of land transfer was seen as a mechanism to augment foreign investment and improve agricultural production by allowing smallholder farmers to use land as collateral for bank loans. However, recent assessments of the Lands Act indicate many of the promised benefits to low- and middle-income landholders have not transpired (Ng’ombe



and Keivani 2013; Nolte 2013). Smallholder farmers have been largely excluded from titling, and customary land rights have diminished. As Brown (2005) has documented in several chieftaincies, the majority of large conversions of customary lands has been awarded to Zambian elites and international investors, despite the requirement of approval from local chiefs. In Western Province, authorities awarded only 18% of granted titles to women between 1991 and 1997 (Kajoba 1998).

Many traditional leaders continue to question the intent of the Lands Act, which has gradually wrested control of land away from customary authorities, including the Barotse Royal Establishment, into private ownership arrangements subject to market forces. In some instances, chiefs have additionally used the Lands Act as a revenue source, particularly in tourist areas (Brown 2005). In rural areas, smallholders are often unaware of their right to obtain an official land title. In addition, there are a number of obstacles to obtaining

government-issued titles, particularly related to the costs associated with titling fees, official land surveys and travel to relevant offices (Brown 2005; Malambo 2014; Ng'ombe et al. 2014).

Rights to land in areas administered by the Barotse Royal Establishment are determined by residence, whether people are Lozi or not. Village *indunas* have the ability to restrict access to land if a landholder does not conform to local norms (Service et al. 2007). Gendered access to land in Zambia broadly, and in Western Province specifically, is evident. According to Machina (2002, 9), "In rural and urban areas [of Zambia], whether educated or not, women do not have equal opportunity to access, inherit and buy land by comparison with men."¹⁷ Women face multiple political, cultural and economic barriers in accessing and benefitting from land resources (Pearl 2003).



Photo Credit: Suendran Rajanathan/Wardfish

Cattle pulling bundled dried fish destined for sale in a distant market.

Fisheries

Across sub-Saharan Africa, fishing-related activities contribute significantly to household food security and income, with an estimated 35 to 45 million people and their dependents relying on fish products for their livelihoods and nutrition (Béné and Heck 2005; Westaway et al. 2007). The natural fisheries are an important source of livelihood in rural Zambia and in Western Province, where more than half of all households participate in fishing activities.¹⁸ Waterways of the floodplain offer an abundance of aquatic resources, including fish, reeds and papyrus, as well as vital transportation routes during the flood season. The Barotse Floodplain fishery provides habitat for an estimated 80 fish species and generates income and food for 70,000 people (AAS 2013). In Zambia overall, fish provide over half of the national average protein intake (Maguswi 2003). A 1988 environmental study estimated fish consumption in Western Province at five times the national average (van Gils 1988 in Turpie et al. 1999).

Literature on fisheries commonly associates the majority of economically valuable activities with men and their dominant role in fish capture. Despite the value-enhancing roles and tasks of women and children, they are generally excluded from fishery narratives (Browne 2002; Williams 2002; Westaway et al. 2007; WorldFish Center 2010; Mojola 2011).

In the Barotse Floodplain, around 70% of fishers are men and about one-quarter are women (Turpie et al. 1999). Artisanal fishing using nets, hooks, traps and baskets is the predominate method of fish capture in the floodplain. Men commonly paddle boats or canoes and are thus able to access deeper waters where numerous and larger fish species are found. Women capture fish using primarily baskets, traps and small nets in shallow waters. The benefits derived by women from the use of these gears and practices are relatively limited compared to those of men, who fish using larger nets and hooks. A woman's catch is typically consumed within her home instead of being sold or traded for maize-meal or vegetables (Pitamber 2006). Women in the floodplain are heavily engaged in fish processing, and children often assist their mothers or female relatives in drying fish or watching over the product to prevent theft (Turpie et al. 1999; Williams 2002).

The Barotse fishery is under the dual authority of the government Department of Fisheries and the Barotse Royal Establishment. The Department of Fisheries maintains responsibility for research activities and issuing licenses, while the Barotse Royal Establishment manages the area as a common-property resource. In practice, the floodplain fishery operates as a predominantly free-access system (Simwinji 1997; Madzudzo et al. 2013). Fishers gain access through local *indunas* and settle in seasonal migrant camps. Licenses issued by the Department of Fisheries are typically allocated to outsiders, rather than local residents, and, in general, revenue from licensing fees is not shared equally with the Barotse Royal Establishment (Madzudzo et al. 2013).

To maintain the viability of the fishery, the Department of Fisheries declares a fishing ban each year from December to February. The ban is initiated in consultation with the Barotse Royal Establishment, which assists in enforcing the closed season. Also, the Fisheries Act of 2011 specifies a number of regulations pertaining to mesh size and the use of traps. However, seasonal fishing bans are often unenforced, and the use of illegal fishing gear is widespread, despite the potential penalty of fines or 2 years of imprisonment (GRZ 2011). One illegal method that is problematic in the floodplain is the use of *sefa-sefa* nets—heavy seine nets that capture fish, fry and eggs. These types of nets are particularly destructive in shallow water, which is common breeding ground for numerous fish species. Illegal practices persist due in part to self-interest among customary leaders and lack of enforcement from regulatory agencies, as well as the critical role of fishing for local food and livelihood security (Madzudzo et al. 2013).

Poor management, illegal fishing and overfishing have significantly reduced fish stocks in Zambian fisheries (Kolding and van Zwieten 2014). In research by Turpie et al. (1999, 63), fishers reported that declines in catch size began in the 1970s, accompanying a shift from “primitive” fishing methods to the use of “improved” cotton nets. In recent years, changes in catch composition, smaller catches and smaller fish size indicate that the decline is reaching serious levels, threatening the viability of the fish stocks upon which the

Barotse fishery depends (AAS 2013). Presently, there is desire among fishers, the Barotse Royal Establishment and the Department of Fisheries to restore the fishery. While there are persistent barriers to cooperation between the Barotse Royal Establishment and government extension agents (Malasha 2007), the decline of the fishery has prompted more effective cooperation to pursue a co-management system involving the Barotse Royal Establishment, Department of Fisheries and local people (AAS 2013).

In addition to illegal and management practices that threaten the fishery ecosystem, the documented practice of “fish for sex” raises concerns. This is a practice in which women and men negotiate sexual relationships or encounters in exchange for free, discounted or first selection of fresh fish (see Simona et al. 2004; Béné and Merten 2008; WorldFish Center 2010). This high-risk practice potentially increases transmission of HIV and reinforces negative stereotypes around men and women whose livelihoods depend on fishing (Kissling et al. 2005). While information related to various forms of transactional sex is limited in the Barotse context, studies of transactional fish for sex in the nearby Kafue Flats fishery (Merten and Haller 2007; Béné and Merten 2008; Lungu and Husken 2010), Lake Malawi (MacPherson et al. 2012) and Lake Victoria (Medard et al. 2002; Mojola 2011) have documented risk factors and provide a starting point for further investigation in the Barotse fishery.

Forestry

The Integrated Land Use Assessment (ILUA 2005–2008) for Zambia estimates that around two-thirds of the country’s total land area is forested (Mukosha and Siampale 2008).¹⁹ Forest resources provide critical services for most rural people in Zambia, including fuelwood, building materials, and mushrooms, fruits and other wild foods. People harvest medicinal plants, timber and animal products (Kalinda and Bwalya 2014). These forest resources are particularly important during periods of shock or stress, when rural people depend most heavily on forest products as a source of food and fuelwood. Zambia’s forested areas are regulated by the Forestry Department, housed in the Ministry of Lands, Natural Resources and Environmental Protection. In Western Province, the Barotse Royal Establishment administers

parallel policies related to the harvest of forest resources.

Forest loss in Zambia is estimated to range between 250,000 and 300,000 hectares each year—a rate of around 1.5% per annum. This rate is expected to increase in the next 15 years (Vinya et al. 2011). Recent studies show that Zambia has one of the highest rates of forest loss in the world (Henry et al. 2011). The primary drivers of deforestation are clearing for agricultural expansion, infrastructure development, wood extraction and fires. As Vinya et al. (2011) observe, however, underlying these direct drivers are multiple factors, including poverty and lack of employment opportunities, insecure land tenure rights, and a lack of institutional capacity in the forestry sector (see also Kalinda et al. 2008).

The ILUA estimates that the forests of Western Province comprise 10.6% of Zambia’s total forest biomass (Kalinda et al. 2008). The woodland areas of the province feature many valuable hardwood timber species that have supported a widespread and “apparently unregulated” commercial timber industry (Frost 1999, 342; see also Asanzi et al. 2014). Since the 1960s, deforestation has been considered a threat to biodiversity in the area (Timberlake 1998; Turpie et al. 1999). The most significant drivers of deforestation in Western Province are charcoal production, agricultural expansion, increased incidence of uncontrolled fires set to prepare agricultural lands and improve pasture lands and fuelwood collection, and commercial logging. While the demand for timber products (charcoal in particular) is expected to increase in Western Province and elsewhere, to date the province has reported one of the lowest rates of deforestation in Zambia.²⁰

In Zambia, women provide much of the labor in the forest industry, including in seedling nurseries, establishing plantations, logging and wood processing (HMCS 2005). Chandi (2002) found that compared with women in other countries throughout the region, Zambian women use more wood fuel as a source of energy (*in* Eckman 2007). Women are the primary collectors of fuelwood, wild fruits, fodder and other nontimber forest products for both home consumption and sale at local markets (Eckman 2007; Lwando 2013). In

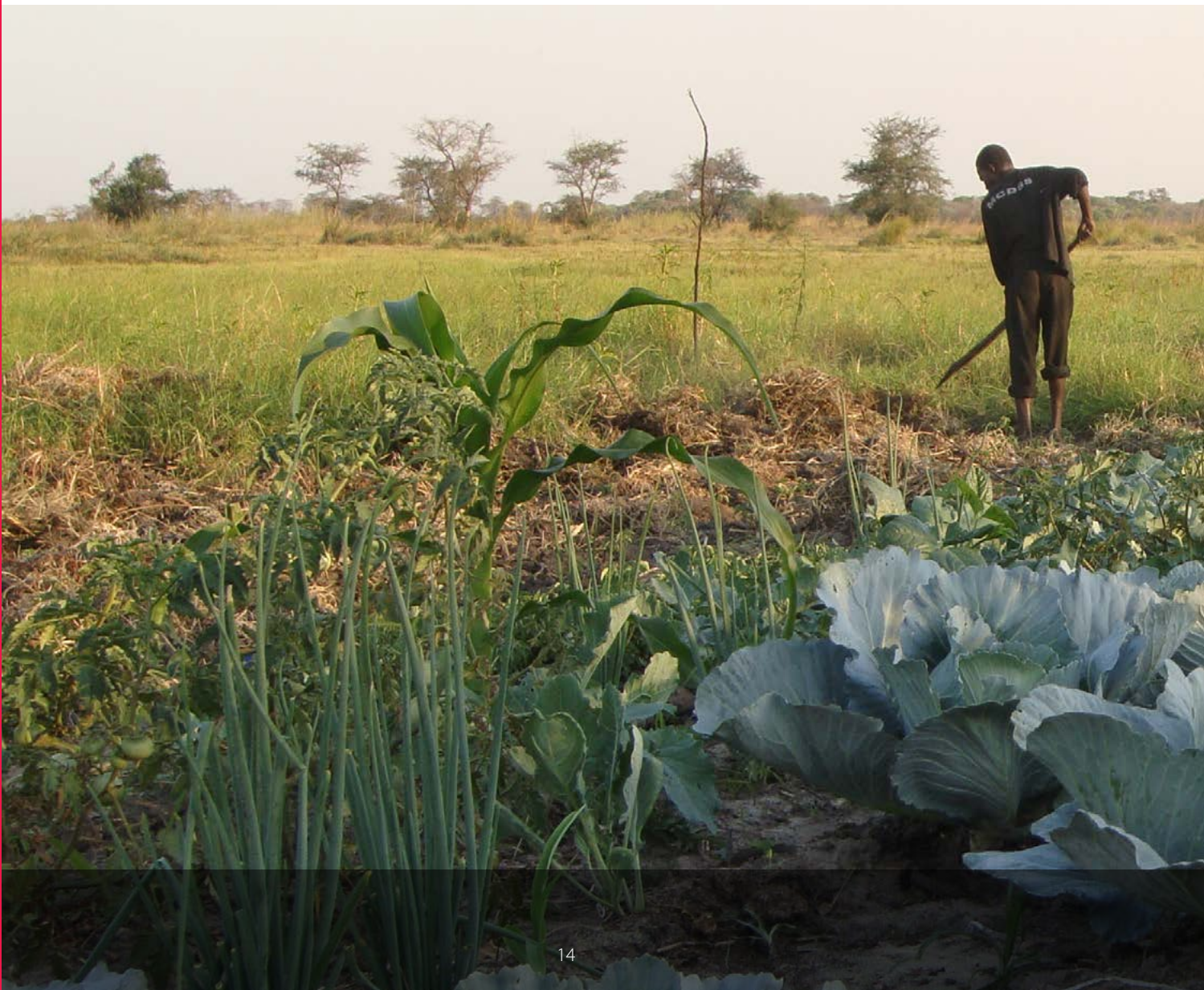
Sesheke District of Western Province, Lwando (2013) reports that women are increasingly unable to harvest sufficient quantities of wild fruits due to persistent droughts. Because of their reliance on forest resources, women are often the main keepers of local knowledge about the use and management of trees and forest plants (Eckman 2007). They are also disproportionately disadvantaged when forest resources, namely fuelwood and wild foods, become more difficult to access as a result of drought or land clearing for agriculture (Lwando 2013).

Agricultural production

Subsistence farming and livestock rearing are the major livelihood activities in Western Province (Turpie et al. 1999). The primary crops produced for household consumption are maize, cassava, groundnuts, beans, sweet potatoes and assorted vegetables. Rice is the

primary cash crop in the area. Cattle are the primary livestock, and the Barotse Floodplain is traditionally one of the most productive cattle areas in Zambia (Simwinji 1997). Cattle provide milk, manure, meat, income and draft power. They are also significant as indicators of wealth and are commonly used for bride-wealth payments (Concern Worldwide 2008). Although cattle are rarely slaughtered for meat in the rural context, the cattle market is active in Western Province and buyers do slaughter or transport live cattle. Chickens, pigs, goats and donkeys are also reared throughout the province (Turpie et al. 1999; Baidu-Forson et al. 2014).

While men maintain primary responsibility for land preparation, women are predominant in several agricultural tasks, including planting, watering, weeding and harvesting. Despite the amount of labor women contribute, they exercise little control over decision making,



financial transactions or marketing of products. This situation commonly results in a lack of access to credit and high-value assets such as cattle. In addition to agricultural production, women invest significant amounts of time in caring for children, fetching water and firewood, cooking, and cleaning (Pitamber 2006).

In general, most subsistence farmers in Western Province have limited resources and lack the ability to acquire additional assets. During periods of shocks or stress, such as illness or divorce, or in order to cope with monetary expenses such as school fees, many farmers sell their labor or livestock to obtain cash or foodstuffs. A study by Concern Worldwide (2008) noted that many subsistence farmers in the province are unable to rely solely on the income from their own farm plots and must engage in piecework to supplement household income. The diversion of household labor away from own production to engage in piecework

activities during the rainy cultivation season tends to result in low food production for these households (Bezner Kerr 2005; Cole and Hoon 2013), what Devereux (1999) calls an “erosive” response to securing food or cash in times of shortage. Moreover, the greatest demand for labor coincides with the hungry season in most rural areas of Zambia. Households with greater resources are able to maintain or increase production by hiring piecework labor, contributing to the erosive and oftentimes exploitative cycle of piecework relationships (Hoon 2007; Sitko 2010; Cole and Hoon 2013). Women are particularly affected in this context due to inequalities in access to land and resources.



Man clearing land to expand vegetable production.

Education

Zambia is home to nearly 4.5 million children of school age, 2.8 million of whom are of official primary school age (7–13 years; EPDC 2014a). In recent years, Zambia has made considerable progress on primary school enrollment, which increased from 80% in 1990 to 93.7% in 2010. National youth literacy climbed from 74.9% to 88.7% over this same time period. These improvements are attributed in part to investment in education infrastructure, the introduction of free education, and the Program for Advancement of Girls' Education, a Ministry of Education initiative that seeks to reduce gender disparity and improve quality in education. In addition, the 1997 "re-entry to school" policy has promoted girls' attendance by allowing young mothers to return to school following pregnancy, although the impact of the policy is considered minor, as recent mothers often cease schooling within a few months after re-entry (Mwansa 2011; Buus 2013).²¹

Despite significant improvements in educational enrollment and gender parity overall, it is notable that approximately 5% of young people have no formal education, and fewer than 40% pass their final exams in secondary school—and only 19% of girls (Buus 2013; EPDC 2014b). For secondary school students, enrollment drops to 68% for lower secondary (14–16 years) and down to 56% in the final years of schooling (17–18 years; EPDC 2014b).

Data on education indicators reveal a great deal of disparity in educational enrollment by age, sex, income and location. Around half of all 7-year-old children are out of school (46.8%). While enrollment increases over the primary school years, by 12 to 13 years of age, there emerges a noticeable gender gap in favor of boys (UNICEF 2014). This trend persists through secondary school, where an estimated 36% of girls are out of school, compared with 19% of boys (EPDC 2014b). Across Zambia, resource-poor children are far less likely to attend school than children from better-off families: 27% of primary-age children from the poorest quintile are not in school, compared with 4% of children from the richest quintile. Similarly, 23% of primary-age children from rural areas are out of school, compared with 9% of urban children (UNICEF 2014).

In Western Province, school participation is lower than in any other province in Zambia. An estimated 28.4% of primary-age children are out of school. Notably, Western Province also records the greatest gender gap in Zambia, with 5.9 percentage points in favor of girls at the primary level. This shifts in secondary school to favor enrollment of boys. Data on school dropouts from the Ministry of Education in 2007 (UNICEF 2014) indicated that while dropout rates remain consistent for boys as students advance to the secondary level, the dropout rate for girls increases. By grades 8 and 9, the dropout rate for girls in Western Province is the highest in the country.

The causes for low school participation, particularly in resource-poor and rural areas, are multiple and complex. Nationwide there is greater investment in education in urban and wealthier districts.²² Pupil-teacher ratios are highest in remote and rural areas, for example, with an estimated 49.2 students per teacher in Zambia overall (EPDC 2014b; UNICEF 2014). According to the 2010 Central Statistics Gender Report (CSO 2012b), the primary reasons for dropping out of school for students in grades 8 to 12 included lack of financial resources, lack of placement opportunity and pregnancy.²³ The number of girls becoming pregnant during their basic school education (grades 1 to 9) increased dramatically between 2001 and 2009, from 9,111 to 13,769, respectively.

For girls, specifically, early sex, pregnancy, abuse and early marriage all contribute to lack of school participation. Also, there is a documented preference among families to educate boys for "instrumental and breadwinning" roles and girls for "expressive and caregiving" roles, which favors investment in formal education for boys at the household level. Finally, distance to school and facilities and structures (e.g. toilets) that are "unfriendly" to girls contribute to high levels of absenteeism among girls, particularly during menstruation. In Zambia and Western Province, as elsewhere in the world, evidence abounds that gender often acts as an intensifier of multiple constraints to educational attainment, interacting with other barriers such as poverty, division of household labor and other social factors (Lewis and Lockheed 2006; UNICEF 2014).

Increased levels of education, particularly for girls, significantly increase per capita income, reduce malnutrition and infant mortality, improve farm productivity, and prevent the spread of HIV and AIDS (see Herz and Sperling 2004). Education also empowers girls to engage in leadership roles within and outside their communities. Government, international donors and nongovernmental organizations (NGOs) have given high priority to promoting girls' attendance and advancement (Rakodi 2005). While Zambia has made considerable improvements in educational access and parity, numerous and interlinked barriers continue to prevent children in Zambia, especially girls, from attaining education.

Health status

In recent years, Zambia has made significant progress in the delivery of health services, which has led to improvements in a number of health indicators.²⁴ From 2002 to 2013, life expectancy increased from an average of only 43 years of age in 2002 to 60 years for Zambian women and 55.4 years for men (57 years overall). Maternal, infant and child mortality have improved steadily over this same time period.²⁵ The prevalence of underweight children under 5, as an indicator of malnutrition and hunger, declined from 28.1% in 2002 to 13.3% in 2010. Between 2006 and 2010, the prevalence of HIV among adults (15–49 years) declined from 16.1% to 14.3% (Buus 2013).

Nonetheless, government expenditure on health care was only 5% of GDP in 2013 (World Bank 2015a), and Zambia continues to experience a high disease burden (MoH n.d.). Although improved, relatively low life expectancy in Zambia is associated with a number of communicable diseases, namely HIV and AIDS, malaria and tuberculosis, and lower respiratory infections (IHME 2013). According to the Ministry of Health National Health Strategic Plan (2011–2015), malnutrition underlies over half of all deaths among children under 5 years of age. Diarrheal disease is also a primary cause of illness and mortality. Notably, nearly 60% of the population lacks access to improved sanitation facilities, such as flush toilets, pit latrines or composting toilets (World Bank 2015a). Western Province records the lowest access to sanitation in Zambia, where 44%

of people have no access at all to sanitation facilities (Buus 2013). The Global Burden of Disease Study for 2010 (IHME 2013) also indicates meningitis, neonatal encephalopathy and syphilis among the primary causes of premature mortality in Zambia.

While overall maternal and child health in the country have improved, the maternal mortality rate in Zambia is still high (Buus 2013). In 2010, the Western Province of Zambia had the highest maternal mortality rate in the country with 789 deaths per 100,000 live births (MCD and MoH 2013), substantially higher than the Millennium Development Goal target of 162.3 for the country by 2015 (Buus 2013). The increase in rural health centers has had a positive effect on maternal health, but there continues to be a low ratio of nurses, certified midwives and doctors throughout the country. UNICEF reports that less than half (47%) of all births are attended by a skilled healthcare worker. Similarly, only half (49%) of all pregnant women receive postnatal care.²⁶ There is also concern about high rates of teenage pregnancy in Zambia, with around 16,000 teenagers between 15 and 19 years of age becoming pregnant each year (World Bank 2015b). In 2007, 28% of teenagers had a child or were pregnant, with the highest proportion of childbearing teenagers in Zambia found in Western Province (43.6%; CSO et al. 2009).

An estimated 15% of men and women in Western Province are living with HIV, with a higher prevalence among women than men (16.1% and 13.9%, respectively; CSO et al. 2009). Research in Zambia has shown that young women of reproductive age are four times more likely to contract HIV than their male counterparts (Kiremire and Nkandu-Luo 1996 *in* Kapungwe 2003). In Zambia and elsewhere, women are particularly vulnerable to contracting HIV due to both biological and socio-cultural factors (Whelan 1999), such as gender inequalities that disadvantage women and initiation rites for girls that delay transmission of knowledge related to sexual conduct until puberty (Kapungwe 2003). Notably, Western Province reports the highest proportion of women aged 15 to 24 years (28.6%) who engaged in sex before 15 years of age (CSO et al. 2009).

Of particular relevance for the Barotse Floodplain is growing awareness of high rates of HIV in fishing communities in developing countries (Allison and Seeley 2004). In many cases, prevalence rates exceed those of other high-risk groups, such as miners, long-distance truck drivers and commercial sex workers. In a study of HIV prevalence in 10 countries, Kissling et al. (2005) found HIV rates in fishing communities to be 4 to 14 times the national rates in all but one country (Brazil). For the three sub-Saharan African countries (Democratic Republic of Congo, Kenya and Uganda) for which data were available, prevalence rates among fisher populations exceeded all other high-risk groups. Elevated prevalence rates in fishing communities occur due to various behavioral and environmental risk factors, including but not limited to the typically young age of the population (18–35), highly mobile and in some cases migratory lifestyles, interconnected sexual networks, low condom usage, high levels of alcohol and/or drug consumption, and social marginalization.

Marriage practices

Throughout sub-Saharan Africa, marriage is recognized as a complex institution manifest through various stages of rites and rituals (Meekers 1992). In Zambia, the institution of marriage is governed by a dual legal system of statutory and customary laws (OECD 2014). The Marriage Act of Zambia, under statutory law, stipulates that individuals must be at least 16 years of age to marry. The law requires written consent from a parent or guardian for anyone less than 21 years of age to marry.²⁷ In contrast, customary law requires no minimum age to marry (United States Department of State 2012).

Women in Zambia typically marry at an earlier age than men (Taylor 2006). The median age at first marriage for men in 2014 was 23.9 years, compared with 18.4 years for women (CSO et al. 2015).²⁸ In Western Province, the median age at first marriage is slightly higher than for



The Barotse Floodplain, Zambia.

Zambia overall, for both men (24.3 years) and women (20.5 years). According to Garenne (2014), age at first marriage has steadily increased in Zambia since 1950, although in general the shift has occurred more slowly in rural than in urban areas. Nonetheless, teenage marriage continues to be common in Zambia, particularly among girls. According to UNFPA (2012), Zambia has one of the highest rates of child marriage (under 18 years of age) in the world, with 42% of women (20–24 years) married before age 18 (in 2002 and 2007), and 47% in Western Province. Early marriage of girls increases their vulnerability to bonded labor, commercial sexual exploitation and violence (Nalungwe 2013).

In Zambia, polygyny was a common practice among many ethnic groups prior to the arrival of Christianity. With the widespread adoption of Christian practices, polygyny is now generally not practiced (Taylor 2006). In Zambia today, 12% of women and 7% of men are in

polygynous relationships (CSO et al. 2015), down from 16% of women and 9% of men in 2002 (CSO et al. 2003). While the prevalence of polygyny has decreased over time, the practice of multiple concurrent relationships has taken a different form, with (primarily) men choosing to engage multiple sexual partners by having girlfriends while married (Taylor 2006; Do and Meekers 2009). This practice, commonly referred to as having a “side plate,” “spare wheel” or *mai nini* (“junior mother” or “junior wife”; Underwood et al. 2008, 13), increases the risk of HIV infection, marital disruption, domestic violence and divorce.

Paying bride wealth, referred to generally as *lobola*, is an important marriage practice among most ethnic groups in Zambia (Taylor 2006). Over time, a number of matrilineal ethnic groups have adopted the practice of *lobola* (Whande 2007). Although changes in bride-wealth arrangements have occurred, such as payment amounts or items exchanged, the



Photo Credit: Steven Cole/WorldFish

Cattle in a kraal at dawn in the Barotse Floodplain, Zambia.

practice of paying *lobola* persists as an indicator of wealth and medium of property circulation (Mizinga 2000).

Under customary law and as a widespread social norm, a marriage is generally considered invalid when *lobola* is not paid (Whande 2007). In such cases, women are characterized as “prostituting” (Muthegheki et al. 2012). Some argue that bride-wealth payments enable men “ownership” of their wives (Whande 2007), whereby a man treats his wife as “an object instead of an equal partner” (Sithole 2005, 14). Historically, however, *lobola* has been seen as a way of giving respect to a wife and a form of “insurance” in her marriage. It signified a pledge and compensation for lost services when a woman leaves her biological family and takes up residence in her husband’s village, as well as a formal process for joining families. It is important to note, however, that in marriages where *lobola* is paid, men continue to hold “absolute” rights over children and the reproductive rights of the wife (CEDAW 2010, 49).

In contemporary Zambia, the practice of paying bride wealth is putting pressure on young women to find men who are able to pay bride wealth and on men who must procure cattle, goods or cash as payment. Research on bride wealth has shown that the practice can drive men into debt and poverty, while not securing *lobola* can result in family conflicts or loss of status and respect. This, in turn, may increase the likelihood of domestic violence or divorce. In some cases, couples elope or become pregnant out of marriage to evade bride wealth (Muthegheki et al. 2012).

As the norms guiding the institution of marriage in rural areas of Zambia change, one noticeable corollary is the large numbers of women heading their households, particularly in Western Province. The percentage of women who head their households in Western Province (33%) is over 10% higher than in Zambia overall (CSO 2012b). Women who head their households tend to incur heavier work burdens than their male counterparts, as they typically lack support from other adult family members in raising children, cultivating food and cash crops, and generating income from nonagricultural activities (Moghadam 2005; Blackden and Wodon 2006; Manda and

Mwakubo 2014). Women’s incomes are lower than those of men, and they face greater constraints on their socioeconomic mobility due to cultural, legal and labor market barriers (Kabeer 2012). Woman-headed households lack entitlements such as assets (e.g. land and livestock), extension services, credit, education and healthcare, all of which increases their vulnerability and that of their children to poverty and food insecurity.²⁹

In terms of decision making within a marriage, the 2013–14 Demographic Health Survey (CSO et al. 2015) found that in Zambian households 28.6% of men 15–49 years old determine how to use their cash earnings, whereas 6.9% of women are the main makers of such decisions. Nearly two-thirds of men (64.1%) reported making joint decisions with their wives about how to use cash earnings. Among women of comparable age, 58.7% indicated joint decision making with regard to use of their husband’s income. These findings suggest that on the whole in Zambia, spouses do engage in joint decision making about how to allocate household income.

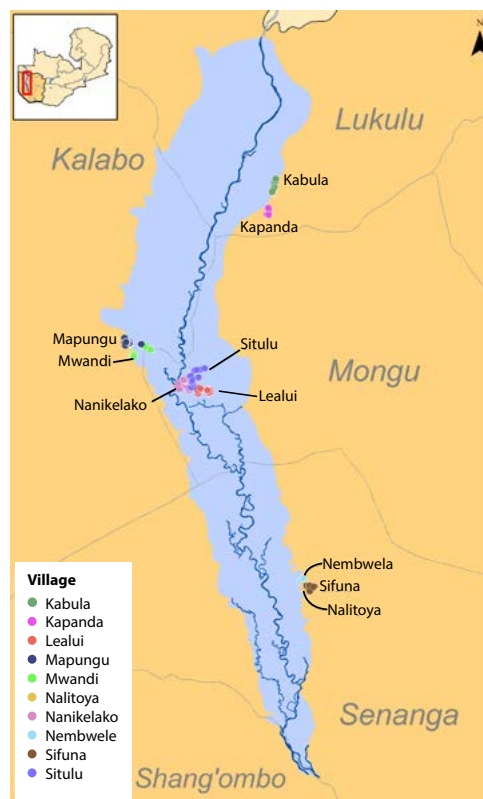
A SOCIAL AND GENDER ANALYSIS OF BAROTSE FLOODPLAIN

In 2012, the AAS diagnosis and design team, in consultation with a variety of stakeholders, identified 10 focal communities in Western Province in which to pilot AAS.³⁰ The program selected focal communities according to a broad range of criteria, including, for example, geographic location, the presence of partner organizations and people's desire to work within the AAS framework. The social and gender analysis was carried out in the focal communities from late September to early November 2013. This section of the report first situates the communities within Western Province, then describes the study methodology and presents the main findings of the analysis.

AAS focal communities

AAS operates in four districts of Western Province, including Lukulu, Mongu, Kalabo and Senanga Districts. In Lukulu District, the focal communities are Kapanda and Kabula. The Mongu District communities are Lealui, Nanikelako and Situlu; the Kalabo District communities are Mwandi and Mapungu; and the Senanga District communities are Sifuna, Nambwele and Nalitoya. Each of the 10 focal communities generally consists of 5 to 10 small villages. The naming of each community refers to a single village within these groupings, which is known for its central location and the presence of a school, clinic, market or the like. Comprehensive profile descriptions of each community can be found in Dierksmeier et al. (2015).

Map 2 identifies the location of the focal communities within their respective districts. The boundary of the floodplain is highlighted in blue. It is noteworthy that the focal communities located in Kalabo and Mongu Districts can be characterized as "floodplain" communities, while those in Lukulu and Senanga Districts are situated along the floodplain boundary. The location of their community in many ways dictates the day-to-day patterns of people. For example, fishing is the mainstay livelihood strategy adopted by people in Mongu District communities, while crop production is most common in Senanga and Lukulu Districts communities.



Map 2. AAS focal communities in four districts of Western Province, Zambia.
(Source: Dierksmeier et al. 2015).

The provincial capital of Western Province is Mongu town. During mid-rainy season, it is not possible to drive in the floodplain; thus, traveling by canoe or boat is required to reach the Mongu and Kalabo District communities from around January or February to June or July. The closest community to Mongu is Lealui. It takes roughly 1 hour to travel by vehicle from Mongu town to the Senanga District communities and around 2 hours to the Kalabo District communities. The road to Lukulu District communities through the floodplain is inaccessible during most of the year, requiring a roundabout trip to get to Kabula and Kapanda that takes roughly 8 hours from Mongu town.

Social and gender analysis methodology

The social and gender analysis comprised three principle activities conducted over 4 to 5 days in each of the 10 focal communities. The activities included community meetings, a community population census, and focus group discussions that employed a variety of tools, described below. Community meetings took place prior to the start of any data collection activities in order to formally introduce the social and gender analysis team, the purpose of the data collection, and the components of the research; provide an opportunity for input from community members; and obtain permission from elders and leaders to carry out the study.

The population census was conducted to determine the number and types of households in each community and collect basic household demographic data (e.g. sex, age and marital status of the household head and household size). The census also recorded Global Positioning System (GPS) coordinates for each household and other important features in each community, such as school buildings, water points, health clinics and cattle-grazing areas.

Throughout the study, focus group discussions provided opportunities for participants to discuss and consider topics relevant to the analysis. Women and men participated in separate focus groups organized around five topical areas, summarized below. AAS researchers also facilitated community meetings during a follow-up dissemination phase. These meetings enabled researchers to share key findings of the analysis with

community members and created a space for critical reflection on the findings and identification of specific actions that community members could implement. The outcomes of the meetings contribute to the findings presented in this section of the report.

The social and gender analysis team included four AAS focal community facilitators (two women and two men), two AAS partner representatives (one woman from the Ministry of Agriculture and Livestock and one man working under Concern Worldwide), two staff members from the Western Province Central Statistical Office (both men), one woman from the University of Barotseland who translated focus group discussion guides, two AAS gender research analysts (both men), and one AAS gender postdoctoral fellow (a man). The team was supported by two senior gender scientists (both women) based in Penang, Malaysia. In addition to the core team members, various AAS staff assisted with the development of the social and gender analysis research plan, including the hub research manager (a woman), the community development facilitator and the knowledge action researcher (both men).

Prior to initiating fieldwork, the social and gender analysis team participated in a week-long training workshop. The workshop included an introduction to AAS, gender equality and social equity, and the purpose and objectives of the social and gender analysis. The training introduced team members to methods; cross-sectional versus longitudinal research; research ethics; and data organization, storage and analysis, as well as reviewing and contextualizing focus group discussion guides and informed consent forms. Team members also had an opportunity to practice leading community information sessions, facilitating focus group discussions, administering informed consent, taking notes and using devices to collect spatial data.

Focus group discussion topics and tools

Gender norms, practices and trends. The social and gender analysis team asked women and men to discuss changes in gender norms and practices related to education, marriage, divorce, bride wealth, polygyny, decision making and why these changes have occurred. Participants discussed desired changes in

these norms and practices, as well as norms and practices that are unlikely to change and why. Participants also discussed, in general terms, their views of people whose beliefs and behaviors deviate from the norm and the consequences of not following these norms.

Seasonality. Researchers asked focus group participants to list primary agricultural and off-farm livelihood activities and important domestic activities. For each activity, participants discussed the intensity of the activities performed across the year and who performs them (men and/or women; sex-sequential or -segregated). Participants also considered seasonal variation in food and water availability, piecework, expenditures by type, community activities (e.g. weddings and funerals), incidences of morbidity (both human and livestock), and remittances. Other key topics of discussion included periods of low cash flow, ways of coping during such times, and differences in cash flow between women and men, the resource poor and the better off, and among other social groups.

Natural, material and social resources. Focus group participants identified various social groups in their communities and the prevalence of woman-, man- and child-headed households, as well as those involved in polygynous relationships. They also considered shifts in living arrangements and the extent to which various arrangements are characteristic of a nuclear or extended-family household type. Groups developed community maps that included, for instance, the location of smaller villages, key roads and other infrastructure; forested areas and those used for fishing, grazing livestock and crop production; and where important leaders reside. Other resource-related topics of discussion included land distribution, resource availability and access, decision making around the use of natural resources, areas of conflict and conflict resolution, women's mobility, and the presence of local institutions. Focus group participants also discussed where women and men go when they need help (both informal and formal sources of assistance), how better-off people provide support within their communities, and whether certain groups are unable to acquire support during periods of shock and stress.

Village history and key events. Participants discussed and recorded significant events and/or changes in their communities over the preceding 10 years. Groups also discussed migration to enable a better understanding of patterns and how seasonal migration differs from other types of migration (e.g. for work-related reasons).

Well-being and inequality. Broadly, this focus group discussion sought to gain an understanding of changes in community-level well-being and inequality. Participants shared views on whether women's and men's abilities to generate income and achieve a "good life" had improved, remained the same or declined over the past 10 years. Participants also listed factors that help or hinder women and men to secure livelihoods and considered whether certain social groups are able to better secure their livelihoods than others.

Data organization, storage and analysis

During the study, the social and gender analysis team captured focus group discussions with audio recordings and close-to-verbatim notes. Following each focus group discussion, researchers used the audio recordings to refine and augment written notes, which were then translated into English in the field and collected by team members supervising the fieldwork. Notes were subsequently entered into Microsoft Word in the field, along with relevant pictures of maps or village timelines developed during the focus group discussions. This process enabled the team members to reflect on the discussions, which in turn helped them improve their facilitation skills and engage in the initial data analysis process. Researchers also entered quantitative data (GPS coordinates and basic household demographics) into Microsoft Excel spreadsheets while in the field to ensure that they could address any concerns or data gaps prior to leaving each community. Any remaining data not entered in the focal community was entered and catalogued in early 2014.

The qualitative data for this report was coded and analyzed using Nvivo software. The quantitative data was cleaned and analyzed using Stata. The breadth and depth of data collected during the social and gender analysis (and the rapid gender analysis) provide a

wealth of information that has enabled AAS to benchmark the social and gender situation in the Barotse Floodplain. In addition to this report, findings of the study have been presented in other papers and reports (see Cole et al. 2014b, 2015; Dierksmeier et al. 2015).

Ethical considerations

Researchers followed a number of procedures to protect the rights and welfare of study participants and ensure that the research met ethical requirements. First, the social and gender analysis plan was reviewed by a number of professionals working within and outside of

WorldFish, including gender experts from the University of East Anglia and an international NGO. The researchers addressed any issues the peer reviewers identified prior to carrying out the social and gender analysis. Second, the researchers provided study participants with the contact information of the principal investigator, and provided information on the purpose of the analysis, risks and benefits of participating in the analysis, and confidentiality and privacy matters, including who would have access to the data collected. Third, focus group participants provided written informed consent prior to each discussion.



Young man paddling a boat used for transportation and other purposes, Zambia.

MAIN FINDINGS OF THE SOCIAL AND GENDER ANALYSIS

This section presents the quantitative and qualitative findings from the social and gender analysis. Analysis of the data revealed that while differences certainly exist between communities even when situated in close proximity, the focal communities share a number of similar characteristics around livelihood strategies, access to natural resources, changing marriage and bride-wealth practices, and education. In many ways, as corroborated by the literature review, the findings of the social and gender analysis are representative of the experiences of rural people living throughout Zambia.

Household demographics

The community census recorded a total of 1,200 households in the 10 focal communities (Table 1). The communities in Mongu District contain a relatively large number of households (497) compared with the focal communities in other districts. The number of households per community ranges between Nanikelako in Mongu District with 182 households and Nembwele in Senanga District with 63 households.

The average household size across the communities is 5.3 members and the average age of household heads is 45 years. Man-headed households comprise over half of those surveyed in the census (55%).³¹ When disaggregated, the data begin to reveal some interesting differences between women and men who head their households. Average household size for men who head their homes is 5.8 members, and for woman-headed households the average size is 4.7.³² Women who head their homes, on average, do not have an additional family member (such as an adult male) to assist with productive and reproductive tasks or other activities. The mean age of men who head their households is 43.5 years, and for women who head their homes it is 46.7 years, the latter most likely skewed slightly upward because of the high number of widowed and divorced women heading their households.

District	AAS focal community	No. of households	% of total
Mongu	Lealui	168	14
	Nanikelako	182	15
	Situlu	147	12
	Subtotal	497	41
Kalabo	Mapungu	156	13
	Mwandi	115	10
	Subtotal	271	23
Senanga	Nalitoya	100	8
	Sifuna	105	9
	Nembwele	63	5
	Subtotal	268	22
Lukulu	Kabula	90	8
	Kapanda	74	6
	Subtotal	164	14
	Total	1,200	100

Table 1. Number of households in each AAS focal community.

Table 2 presents the marital status of women and men household heads in the focal communities. The table shows a substantial difference in the marital status of men and women. While nearly 90% of men who head their homes are married, only 20% of women heads of households are married (19.3% “married” and 2.8% “polygynous”). More than 25% of women who head their homes are widowed, and 37% are divorced. Woman-headed households face a number of challenges, particularly with regard to childcare provision, as women are typically responsible for taking care of children after divorce. According to focus group participants, the low percentage of men who head households and are divorced or widowed reflects the common practice in the focal communities of men remarrying after divorce or upon the death of a spouse.

A relatively high number of single women head their homes (14.7%), a finding that is corroborated by the qualitative data. Reportedly, women who give birth out of wedlock and who do not marry must leave their parents’ home, primarily for financial reasons. These women are some of the most vulnerable in the focal communities, as their ability to secure food and cash is limited and they lack the support of a spouse.

Polygynous households account for less than 3% of all households surveyed.³³ Some focus group participants reported that extramarital

affairs are widespread and suggested that this situation has largely replaced polygynous marriage practices. Participants believed that polygynous relationships are declining because the cost of living is increasing, which prohibits most men from marrying two or more women. Other reasons offered for the decline in polygynous relationships include the Christian values held by many community members, concern about the transmission of diseases, jealousy between wives, and vulnerability to “charms” (or witchcraft) attributed to engagement in polygynous arrangements.

The census did not find any child-headed households in the 10 focal communities. Study participants indicated that these types of households are extremely rare because of the common cultural practice of relatives or neighbors caring for orphaned children.

Natural resources: Access, use and management

Across the AAS focal communities, residents typically have access to waterbodies, including rivers, streams, lagoons and marshes, as well as woodlands and grazing lands. These natural features are typically held as common-property resources. Customary land throughout most of Western Province is under the jurisdiction of the Barotse Royal Establishment. In regulating resources in and outside the Barotse Floodplain, the Barotse Royal Establishment collaborates

	Woman-headed households (n)	% of woman-headed households	Man-headed households (n)	% of man-headed households	Total households (n)	% of total households
Divorced	199	37.06	38	5.76	237	19.80
Married	104	19.37	576	87.27	680	56.81
Polygynous	15	2.79	15	2.27	30	2.51
Single	79	14.71	18	2.73	97	8.10
Widowed	140	26.07	13	1.97	153	12.78
Total	537	44.86	660	55.14	1,197	100.00

Table 2. Basic demographic data and marital status of household heads, by sex.

with the Forestry Department under the Ministry of Lands, Natural Resources and Environmental Protection, the Department of Fisheries in the Ministry of Agriculture and Livestock, and the Zambian Wildlife Authority. Community members regard *indunas* as custodians of land and other natural resources, while decisions about the provisioning and use of resources are typically made at community meetings, according to focus group participants. In general, women and men focus group participants indicated that women and men have equal voices in decision making around land and other natural resources. However, when examining access or ownership issues using locally salient examples, it became apparent that men predominantly hold decision-making power linked to land and other natural resources, as discussed below.

Land. Agricultural lands are held by individuals and inherited by children—usually males. The primary determinant of the right to access and utilize land is the rules of inheritance (see also Kwashimbisa and Puskur 2014). During all group discussions, participants noted that land acquired from an *induna* is passed down through generations, although the size of the land individuals acquire or inherit tends to differ in relation to socioeconomic status. In many cases, families of *indunas* or influential people own larger portions of land compared to others. Focus group participants also noted that people most commonly acquire additional land when they have large families or superior negotiation skills. Participants perceived that individuals with greater wealth or higher status are in an advantageous position to obtain larger tracts of land, despite consensus-based community decision-making processes. Discussion groups offered examples of resource-poor people who own smaller portions of land yet have more family members compared to better-off people or family members of local *indunas*. Both women and men underscored the power relations at play in shaping people's control over and access to land. With regard to migrants, focus groups reported that rights to access and cultivate land are generally extended to new residents in a community. If people are permitted to settle in a particular community, most often they will be given a piece of land to cultivate.

If you are well off or better off, you can own more land because you are able to pay, although payment is not traditional in Lozi culture when it comes to land. Land is not sold, [but] what is given to the induna (usually in the form of money) is just a token of appreciation, but not [for] buying [the] land.

– Men's focus group, Kapanda

Women tend to lack ownership of land or have less control over or access to land than men. This is due, primarily, to norms governing residence patterns. Virilocal residence predominates. Upon marriage, a woman shifts to her husband's village. The land she inherits from (most likely) her father then falls under the control of her brothers who continue living in their natal village. The land she cultivates in her husband's village is thus not her land by right, given the institutional rules of inheritance. This lack of land ownership by women may, as suggested by Kwashimbisa and Puskur (2014), have important implications in creating disincentives for investments of time and resources in sustainable farming practices.

Timber and other woodland resources.

Community members commonly harvest a number of forest products from raised wooded areas, namely timber, wild fruits and mushrooms. Focus groups asserted that the collection and use of these resources is highly gendered. Women and children are the primary harvesters of wild fruits and mushrooms, which are often collected for sale (see Baidu-Forson et al. 2014). Women add value to wild fruits by, for example, using them to produce a gin known locally as *kachasu*. Trees, used as poles for constructing homes, as well as for making charcoal, canoes, paddles and pounding mortars, to name but a few, are the domain of men. Men cut, harvest and transport lumber, as it is perceived that these tasks require physical strength associated with men. Both women and men harvest firewood.

Wetland resources. The waterbodies of the wetlands provide numerous ecosystem services to people in the Barotse Floodplain. Fish are a critical resource, and fishing is one of the dominant livelihood activities in the area. While both men and women harvest fish for household consumption and sale, focus groups reported that men tend to harvest larger fish and greater quantities of fish from more remote and better-stocked fishing grounds. Reeds, papyrus and other aquatic plants are also critical wetland resources. Typically, individuals must ask permission from local leaders prior to harvesting these resources and in some cases are required to pay a fee. While both women and men have access to reeds and papyrus, men reportedly collect more, in part because they have access to canoes that enable them to harvest in areas that are difficult to reach when

floodwaters are high. Also, men primarily collect reeds and papyrus for sale, while women tend to collect and process these resources, which they weave into mats for sale or use in their homes.

Women have access to these [natural] resources, but then the nature of their strength is insufficient—to cut trees, to sell trees, to build a house. Instead they have to look for a man to hire or pay in kind to access these resources.

– Men’s focus group, Kabula



The Luanginga River (Kalabo District) at sunset.

Threats to ecosystem services. Across the AAS focal communities, discussion group participants raised a number of issues that they perceived as environmental problems. The primary concerns centered on climatic changes, water quality and a decline in natural resources. As discussed in the contextual review in this report, the duration of the flooded period is recognized as a primary determinant of ecological conditions and characteristics in the floodplain (Turpie et al. 1999, 25), as well as of livelihood strategies. In each of the 10 communities, participants indicated that weather variability and alternating periods of heavy rainfall, flooding and drought have disrupted the timing of seasonal agricultural activities. In some communities, people attributed reduced agricultural yields to changing rainfall and flood patterns. Increasing contamination of rivers, canals and lakes also presents an environmental hazard, as these waterbodies provide common sources of water for drinking, cooking and bathing. In some communities, people indicated that consuming water from sources other than boreholes is a significant health risk.

Focus group participants reported that in recent years, they have witnessed a diminishing supply of natural resources, namely trees, reeds, papyrus, birds and other wild animals, and fish populations. Participants associated the decline in these resources with overharvesting and illegal harvesting, despite known risks of heavy fines, arrest and imprisonment. The overexploitation of timber products—in particular rosewood—emerged as a major area of concern (see Asanzi et al. 2014). Participants offered numerous examples of violations, including harvesting a resource during a closed season such as the fishing ban (in place from December to February each year), failing to pay required fees, poaching, overfishing or using illegal fishing methods such as *sefa-sefa*.³⁴ Across focal communities, participants expressed a great deal of concern about the decline of fish populations, largely attributed to the illegal practice of harvesting fish eggs, fry and juveniles that have not yet reached the reproductive stage of their life cycle.

The Barotse Royal Establishment and various government agencies who hold responsibility for natural resource management in the area establish the laws and regulations that define

habitats and identify the methods and gear permitted to harvest timber, nontimber and aquatic resources. With regard to fisheries, for example, the Barotse Floodplain is designated as a multispecies fishery. Consequently, regulations are in place to specify the minimum mesh size of fish nets—a smaller mesh size enables the capture of smaller species and juveniles of larger species—and render *sefa-sefa* an illegal practice. In both Lukulu and Senanga Districts, regulatory institutions lack adequate human resources to effectively monitor and regulate the harvesting of natural resources.

Focus group participants articulated a need for enhanced natural resource management through the formation and strengthening of village-based natural resource committees and government departments. Participants called for increased awareness and sensitization around environmental issues and more sustainable resource-use practices. Specific areas of interest pertain to fisheries, forest management and burning practices (used primarily to increase land available for grazing; see Turpie et al. 1999), harvest of aquatic plants, and water quality.³⁵ It is also noteworthy that during the dissemination phase of the study, community members in Lealui identified disparities in resource access and use and the decline in fish populations attributed to illegal harvest practices—natural resource issues—as two of the three key social and gender issues to address in their community.³⁶

Gendered resources. During many focus group discussions in focal communities, participants discussed disparities between men and women with regard to access to and use of natural resources, such that men tend to benefit more than women. This applies to the ways women and men interact with the natural fishery in the floodplain and with the woodland areas. In both habitats, men are viewed as stronger and thus more capable of harvesting resources—collecting timber for sale in local and export markets or traveling long distances to catch larger fish in greater quantities, for instance. While women, like men, rely on these resources, they are more likely to engage in activities that are less profitable and considered lower in status.

Gender socialization, as articulated by UNICEF (2007, 1) is “the process by which people learn to behave in a certain way, as dictated by societal beliefs, values, attitudes and examples ... [and] it begins as early as when a woman becomes pregnant and people start making judgments about the value of males over females.” Children develop their identities based on their sex and learn particular roles and social behaviors as they grow and develop into adults. Women’s access to and use of the natural resource base in and around the floodplain is heavily influenced by a highly gendered division of labor. It is well recognized that such divisions determine “women’s and men’s economic opportunities, and their capacity to allocate labor time for economically productive activities and to respond to economic incentives” (Blackden and Wodon 2006, 1–2).

Livelihood activities

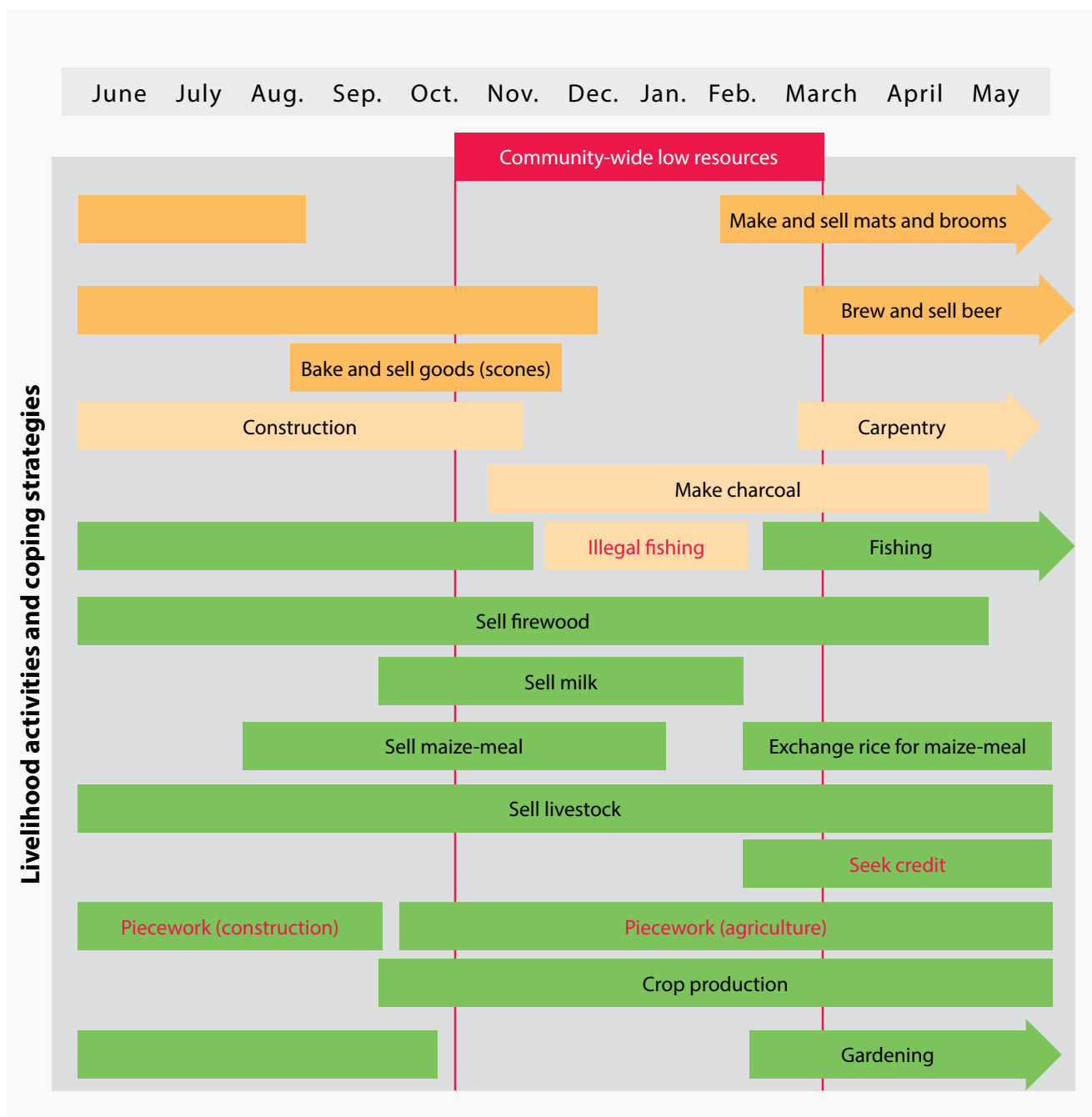
Livelihood strategies in the Barotse Floodplain are diverse and complex, based primarily on farming, fishing and herding. In addition, people engage in various other activities, including beer brewing, piecework, and sale of woodland and aquatic products and artisanal goods. The findings of the social and gender analysis are relatively consistent with those of other studies in the area and in other parts of Zambia (see Concern Worldwide 2008; Baidu-Forson et al. 2014; Kwashimbisa and Puskur 2014). Figure 3 shows the primary livelihood and coping strategies in the focal communities and the times of year men and women typically engage in these activities. Although the list of activities depicted in the figure is not exhaustive, it presents common livelihood activities. While some activities could be viewed as exclusively “female” (in orange; e.g. beer brewing) or “male” (in yellow; e.g. carpentry and construction), involvement in most activities is not distinctly gendered, as women and men have some role in most livelihood activities (depicted in green).

During the rainy season, from November to March, people face periods of heightened vulnerability to food and income insecurity. This “hungry season,” indicated in red in Figure 3, coincides with the preharvest cultivation season and the annual fishing ban. The numerous livelihood activities that take place during this

period create challenges for resource-poor people who are unable to allocate household labor and other assets to adequately participate in the range of activities. In some cases, this leads to a greater reliance on coping strategies, such as illegal fishing, seeking access to credit, and an increase in piecework to the neglect of own-household food production.

Agriculture and livestock. Within the floodplain, people begin planting in August or September, with the intention of harvesting prior to the initiation of heavy rains. Some focus group participants reported that they often harvest crops prematurely before they are destroyed by floodwaters. Upland fields are planted typically in November and harvested in April, following the end of the rainy season. The primary crops are rice, maize, cassava, sweet potatoes, groundnuts, Bambara nuts and sorghum, as well as garden produce such as pumpkin, rape, tomato and cabbage. Maize has been the primary staple and cash crop. With the introduction of rice in the focal communities over the past 5 to 10 years, rice has become equivalent to or has surpassed maize as the most important cash crop in most of the communities. Participants noted a preference for rice, as well as conventional over hybrid maize, for withstanding seasonal flooding and variable flood patterns. Across the focal communities, the primary constraints to production include a lack of inputs (namely fertilizer and flood-resistant and hybrid seeds) and livestock for manure and draft power.

According to participants, cash crop production falls under the domain of men, although women contribute a great deal of labor to cultivating crops for sale and are the principal cultivators of food crops to ensure food and nutrition security in the household. Men have primary responsibility for field-preparation activities—manuring and plowing fields—while women have primary responsibility for planting, weeding and harvesting crops. Women also assist with field preparation by manually breaking up soil. It could be argued that the role of men centers on marketing crops that are most often cultivated on their lands using women’s labor. Cash crops are typically sold within the community or to “briefcase buyers” who pay below-market prices. Study participants across the focal communities



Legend

■ = men and women

■ = men only

■ = women only

black font = livelihood activities

red font = coping strategies

Figure 3. Engagement in primary livelihood activities and coping strategies, by month and sex.

discussed the difficulty of selling both cash crops and vegetables outside of the community due to lack of transport and market access. According to participants, cash from crop sales is controlled by men, although women have some say in deciding how the money is spent.

Rearing livestock is one of the main livelihood activities in and along the floodplain. The most common animals are cattle, pigs, chickens, ducks and donkeys. Cattle, in particular, have an important role in providing individuals with milk, manure and draft power and are significant as the traditional wealth of Lozi (see also Turpie et al. 1999). The sale of cattle provides a critical source of income to community members. Men generally own the cattle, though women may own cattle as well. Participants reported a decline in cattle, largely attributed to an increase in the prevalence of disease. Women tend to rear smaller domesticated animals such as chickens, which are sold to fellow community members for much less profit, often to meet unexpected or one-off expenses related to schooling, health or other household needs.

Fishing. As noted above, both women and men participate in fish capture, although men typically catch larger fish and greater numbers of fish than women. Women tend to fish in small waterbodies and less frequently than men, primarily during times of the year when floodwaters have receded. They generally use baskets to collect fish for both home consumption and sale. Men, on the other hand, travel to deeper and well-stocked fishing grounds, which are often located a significant distance from the household. They use fishing nets (or sometimes line and hook) to catch fish. Women focus groups expressed reluctance to travel to these fishing sites, thereby limiting their access to this resource. It is women who are predominantly involved in postharvest fish-processing activities, such as scaling, gutting and drying, as well as selling.

A common topic of discussion during the social and gender analysis was the practice of illegal fishing, using prohibited methods such as *sefa-sefa* (among men) or mosquito nets (used by women) and fishing during the fishing ban. Focus groups largely regarded illegal fishing as a strategy men employ to obtain food and cash during the ban (December to February), though

both men and women reportedly use illegal gear. Participants attributed the depletion of fish stocks to these practices and, in some communities, are calling for sensitization to promote more sustainable fishing methods and greater enforcement. In Lealui, for example, community members indicated a role for village fishing committees, the Barotse Royal Establishment and the Department of Fisheries to address the impacts of illegal fishing on fish resources and household livelihoods.

Beer brewing. Local beer brewing is a long-standing tradition among women in Zambia. As Hames (2012, 84) observed in Zambia and elsewhere in sub-Saharan Africa, with the commodification of traditional beer production in the late 19th and early 20th centuries, women's economic independence often "rested upon their ability to sell alcohol for money." Today, women are still the predominant producers of beer, while men are the primary consumers of the commodity. The brewing and subsequent sale of beer provides an important source of income for women in the focal communities, particularly for resource-poor women and woman-headed households. In a number of focus group discussions, women commented that the sale of local beer is indeed one of their most profitable activities.

Despite the widespread contribution of beer sales to women's income, there is increasing concern about the level of alcohol consumption, particularly among men, and resultant social challenges, such as increasing rates of poverty and divorce (see Cole et al. 2015). During the study, alcohol consumption emerged as a sensitive—and in some communities, contentious—issue. Participants associated beer consumption with a loss of productivity, income diversion, poverty, school absenteeism and dropouts, and early marriage or pregnancy. While there was general consensus that excessive alcohol consumption is a significant issue affecting communities, community-generated strategies to address the problem differed. Some proposed banning production and sale of local beer, while others argued for restricting hours of consumption or promoting awareness of the negative effects of overconsumption.

Forest products. As discussed above, both men and women harvest resources from forested areas and woodlands. Women typically harvest wild fruits that they can consume, sell or use in alcohol production. For some, these activities are important sources of income. Both men and women collect and sell firewood. Timber products sold on the market for use in local construction or for export to countries such as China are relatively highly remunerative (see Asanzi et al. 2014). As this practice is nearly exclusively male, it enables men to generate disproportionately large sums of cash from the harvest of this forest resource. While charcoal production is not a major livelihood activity in the focal communities, some people (primarily men) do produce charcoal in the uplands for small-scale sale (primarily by women) to people living in the floodplain or working in fishing camps where fuelwood is scarce.

Small-scale business and artisanal production. As Figure 3 shows, people engage in additional small-scale activities to supplement income. Women focus group

participants repeatedly highlighted the profitability of making and selling baked goods, namely fritters and scones. Women also knit, crochet, and make brooms, baskets and other artisanal goods for sale. For women participants, these activities are particularly important from April to August, when there are limited opportunities for piecework.

Piecework. One important strategy for people in the focal communities is piecework, a short-term, casual labor arrangement common throughout Zambia (see Richards 1939; Geisler 1992; Moore and Vaughan 1994; Crooks et al. 2007; Hoon 2007; Ito 2010; Sitko 2010; Cole and Hoon 2013). Reliance on piecework is generally associated with resource-poor and vulnerable people who supply labor to complete agricultural and home-based tasks outside their homes in exchange for cash or in-kind payments. Dependence on piecework during the rainy cultivation season, in particular, is a strategy to cope with food shortages that occur during this period (see the contextual review in this report for more discussion).



Woman brewing *kachasu* at her home.

Figure 4 depicts the primary piecework tasks of women and men in the focal communities, grouped into the categories of agricultural production, construction, and other labor activities, including firewood collection. As the figure illustrates, women participate in about half of these piecework activities, while men take part in all but one task (smearing). Both women and men sell or exchange their labor in crop production activities and firewood collection.

When asked about the relationship between those who pay for piecework and those who hire out their labor, many focus group participants characterized the relationship as exploitative. Participants observed that piecework arrangements may be the only option for resource-poor women and men to secure food or cash. Piecework payments are reportedly lower than the market price for the completion of a particular task. To lighten the burden and complete a task more quickly, couples may cooperate and perform certain piecework tasks together. Some focus group participants felt that the most effective way to complete a piecework task is for a man to perform the task for immediate cash payment and a woman to cultivate in the field. Importantly, those who are resource poor or at the bottom of the socioeconomic hierarchy supply piecework labor year round.

Gender implications of livelihood strategies.

Women are expected to spend a greater amount of time performing home-based tasks compared to men in the focal communities. Activities such as cooking or caring for children and other family members take up a major portion of women's time in a given day, leaving a limited amount of time for other activities: fishing, harvesting forest products, providing water transport to and from town using a canoe, or herding cattle in the floodplain, let alone engaging in profitable business activities such as trading fish in distant markets in Angola, Solwezi or Lusaka.

Worldwide, research on gender roles shows that women are more involved than men in reproductive or unremunerated activities (see Chant 2010), and they are also involved in productive activities to generate cash or secure food. This "double burden" of household reproductive activities and income generation

results in what Gammage (2010) calls "time poverty." Similarly, in the focal communities, women pursue numerous income-generating activities to secure food and other basic necessities, notably children's school fees and materials. However, men tend to gain greater economic benefits than women from the same activities. This finding is relevant to several livelihood domains, exemplified by agricultural production, the rearing and selling of livestock, fishing, and the harvest of forest products. Lower remuneration for livelihood activities compounded by reproductive responsibilities places increasing pressure on women and contributes to the poverty of time and livelihood opportunities women face.

[Women] are involved in a lot of activities like farming and businesses, and they are able to safeguard their finances, while men just spend whatever they have on beer and ladies.

– Women's focus group, Nembwele

Women can do most of the household work, which doesn't give them money, while men are busy with well-paid jobs.

– Women's focus group, Mwandi

Well-being in the focal communities

There are many differences in development outcomes between women and men in the focal communities. The factors that underlie these differences are complex, such as women's relative lack of access to or control of productive resources, women's responsibilities for poorly remunerated and unpaid domestic work, and the perception that men are physically stronger and thus more capable of engaging in certain livelihood activities. This subsection aims to provide a more detailed examination of

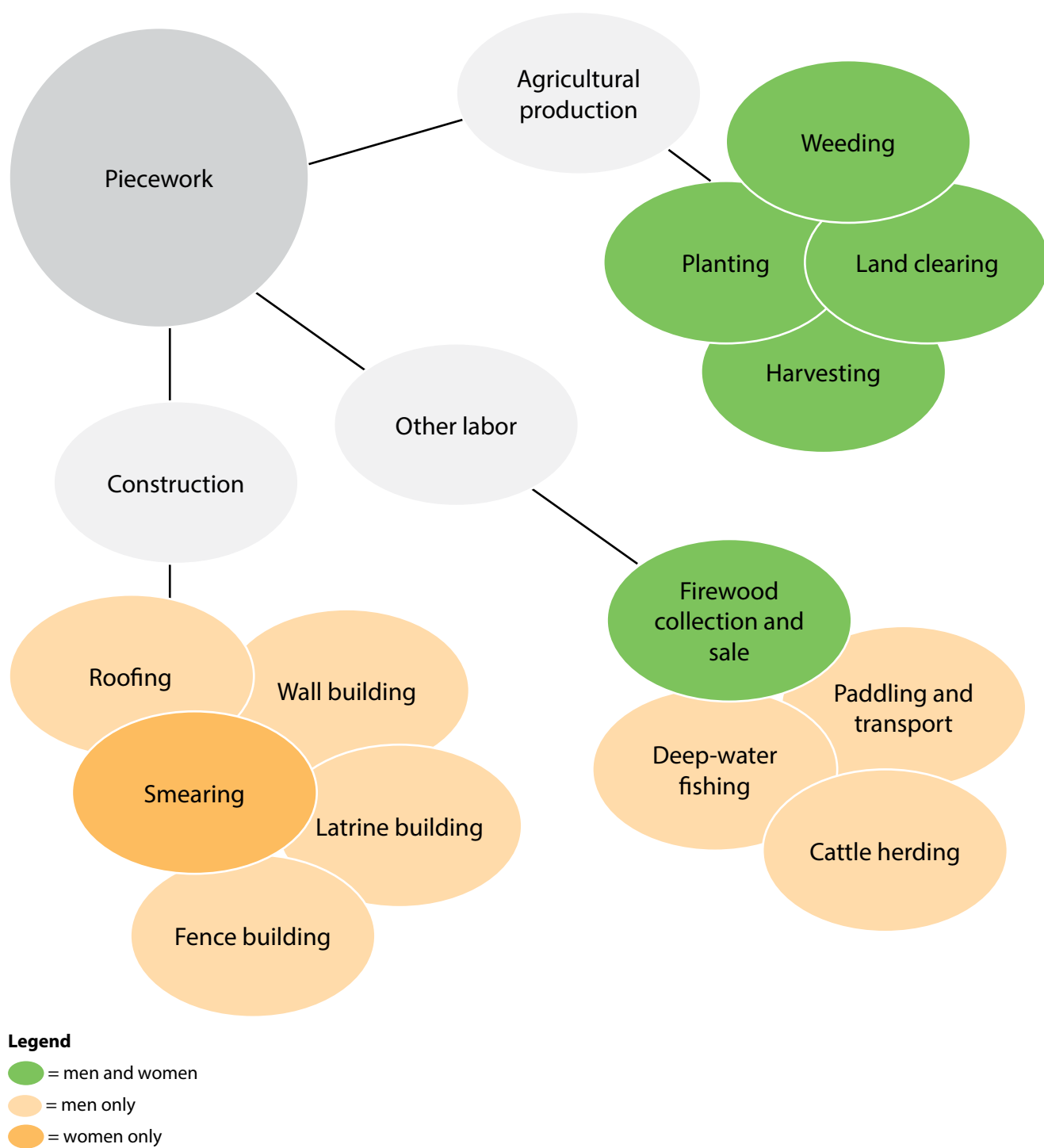


Figure 4. Piecework tasks by category and sex.

differences in well-being status between women and men, recognizing, of course, that women and men are not monolithic groups (McCall 2005).

To refine our understanding of how people perceive differences among those grouped within the broad categories of “women” and “men,” researchers asked focus group participants in each focal community, separated by sex, to describe the characteristics of women and men who occupy different positions (or rungs) of a well-being ladder, as well as those factors that help or hinder their movement up or down the ladder. The Economic and Social Research Council Research Group on Well-Being in Developing Countries (WeD 2007) defines well-being as “a state of being with others, where human needs are met, where one can act meaningfully to pursue one’s goals, and where one enjoys a satisfactory quality of life.” Figure 5 presents an aggregated well-being ladder, based on ladders developed in each community (see Dierksmeier et al. 2015). As the figure and discussion below illustrate, the characteristics, livelihood activities and overall well-being of women and men vary greatly across the rungs of the ladder.

Top rung. Those who occupy the top rung of the well-being ladder are considered better off and possess greater capacities to improve their livelihoods by accumulating more assets than those who occupy the lower two rungs. Focus group participants attributed their ability to live a better life to their capacity to operate at a larger scale.

Men of this rung own an average of 10 to 50 head of cattle, their children attend school through grade 12, their homes are roofed with iron sheets (as opposed to grass thatch), and they cultivate large fields. Factors moving men down the ladder include fires that destroy their homes, theft of household items, cattle diseases, large family sizes, poor decisions, alcohol abuse and illnesses within the family that result in unexpected monetary expenditures.

Much like men, women who occupy the top rung tend to own livestock, cultivate larger fields, have children who attend school through grade 12, and live in iron-sheeted homes. They operate small businesses and hire (as opposed to supply) piecework. Marrying a better-off man is considered a means of moving up the

ladder to the top rung. Factors that contribute to women moving down the ladder include fires that destroy their homes and assets, cattle diseases, husbands’ misuse of funds, divorce, alcohol abuse, unplanned pregnancies, and illnesses within the family. Reportedly, women who lose commitment to a goal or fail to acquire new knowledge often fall from the top rung.

Middle rung. The middle rung describes people who have a better life compared to those on the bottom rung because they own a modest amount of assets, such as cattle, solar panels, radios and phones. Focus group participants identified men on this rung as small business owners, those who diversify income sources, and those who have children who attend primary school (through grade 7). They are not considered poor, and are able to move up the ladder if they diversify their income sources, use resources effectively, work hard and have the desire to move forward. Having a well-connected social network is also an important characteristic of men of the middle rung, as well as being able to provide remittances, inherit property, and have daughters who, when they marry, attract cash or cattle as bride wealth. The factors that cause men to fall from the middle rung are similar to those for the top rung, namely theft, large family size, cattle diseases, family illnesses and abusing alcohol. Additional factors unique to this group are government regulations that restrict livelihood activities (e.g. fishing ban) and engagement in extramarital affairs. The social and economic burden of the latter most often falls on family members, and in particular women, who must find additional resources to help maintain their status.

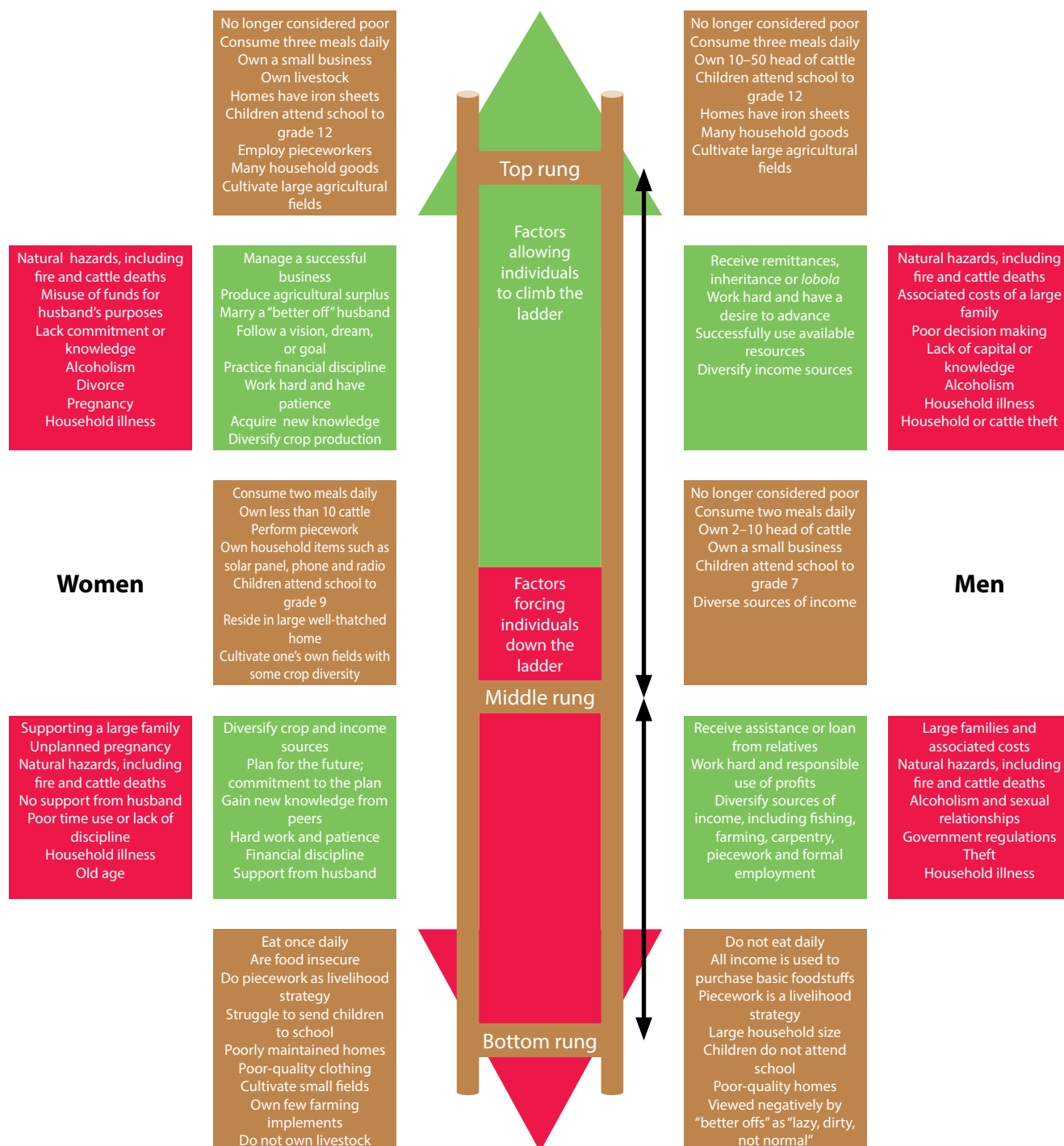


Figure 5. Characteristics of women and men who occupy different positions of the well-being ladder (in brown boxes) and the factors that help (in green boxes) or hinder (in red boxes) their movement up or down the ladder, respectively.

Most woman-headed households occupy the lower two rungs of the ladder. Women of the middle rung supply piecework to secure food or cash, which may signify that they are not as well off as their male counterparts, who do not rely on this activity. They tend to live in large, well-thatched homes, cultivate their own fields, diversify crop production, have children who attend school until grade 9, and consume two solid meals per day. To move up the ladder, women engage in a variety of strategies, such as managing a successful business, practicing financial discipline, diversifying agricultural production or acquiring new knowledge. Patience and determination while following a dream and hard work are characteristics that foster upward mobility. Some focus group participants felt women also need to marry a better-off man in order to climb to the top rung.

Factors pushing women down the ladder include the responsibility to support a large family or unplanned pregnancies, fires that destroy their homes, cattle disease, little or no support from husbands, old age, illnesses within the family, and a lack of discipline or poor time management.

“

The better off also help poor people with oxen, plows and trek chains for plowing ... In this relationship the poor cannot move out easily because that's where their help is that they rely on. Sometimes the relationship is exploitative and sometimes it is not.

– Men's focus group, Sifuna

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Bottom rung. Women and men of the lowest rung generally do not own livestock (especially cattle), yet may rear chickens that can be sold during times of food or economic insecurity. These individuals commonly supply their labor in the form of piecework throughout the year. Women and men of the bottom rung are unable to send their children to school, their family sizes are large and their homes are dilapidated. They may not eat *nshima*³⁷ on a daily basis. When they are able to secure cash, it is often used to purchase basic foodstuffs. Importantly, those higher up the well-being ladder view people of the lowest rung as “lazy” and “dirty.” Women of the bottom rung were characterized as those who eat only one meal per day and are chronically food insecure, dress in poor clothing, and cultivate small fields with the meager assistance of a hoe (as opposed to using draft power).

A poor woman does more activities than the better off because she has to work by herself and at times she has to do piecework. The better off will engage other people to help out.

– Women’s focus group, Situlu



Barotse Floodplain, with grasses and lagoon (in background) and vegetable garden and children (in foreground).

Focus groups perceived that men can move up from this rung by acquiring loans, working hard, using resources appropriately, and engaging in a number of livelihood strategies, including fishing, farming, carpentry, piecework and finding work in the formal sector. These strategies were said to require capital, and thus without loans or other means to purchase agricultural equipment or fishing gear, many men remain at the bottom of the well-being ladder. For women to move up the ladder, they must diversify crop production and income sources, plan for the future, gain new knowledge from peers, work hard and be patient, save when they secure cash, and, critically, receive support from their husband.

In general, it is noteworthy that focus group participants indicated livestock ownership as an important criterion to classify households across the rungs of the ladder, in contrast to land ownership and access, which are not highlighted as well-being indicators. In the context of customary land allocation as practiced in the Barotse Floodplain, where land is governed by the Barotse Royal Establishment and allocated to individuals or households, people are not permitted to sell land during times of distress. Rather, they rely on other privately held assets, such as livestock, which they rear on their own landholdings and/or communal lands. This highlights the importance of livelihood diversification, as well as access to assets that can be sold easily and are divisible.

Changes in marriage practices

Marriage age. Focus group participants perceived that the age at which women and men are marrying has dropped over the past 10 years, a finding which contrasts with other research findings on marriage trends in Zambia (see Garenne 2014). According to participants, young people today marry at around 15 years of age, while around 20 years of age was more common in the past. Data from the Zambia Demographic and Health Survey indicate that median marriage age has been fairly consistent in the recent past (since 2001–2), with men marrying around 24 years of age and women around age 19 or 20 (CSO et al. 2003, 2015). In general, focus group participants felt young women and men who marry early are a financial burden to parents, as they are unable to adequately support themselves.

Changes in marriage age have brought even more problems. These boys and girls have nothing, no money, no assets to take care of themselves. Parents actually take the responsibility of looking after them.

– Men's focus group, Kabula

Participants' views of individuals who marry later in life differed, depending on the reasons for late marriage. Participants maintained positive perceptions of young people who forego marriage to pursue education at the secondary or tertiary level, those who come from wealthy families, and those who are formally employed. Young people who behave inappropriately (e.g. engage in substance abuse), become pregnant outside of marriage or have mental health disorders were considered "abnormal" for marrying late. Reportedly, those (typically men) living in fishing camps near some of the focal communities are now less interested in marrying, and instead, engage in temporary or transactional relationships, which were viewed negatively by participants.

What we see in these villages [is] most girls who come from poor families end up being prostitute[s], [and provide] sex for men, [to buy] phones, food.

– Men's focus group, Mapungu

Cohabitation. Participants also observed that cohabitation prior to marriage is increasing in the focal communities, despite widespread parental and social disapproval. Participants felt that, increasingly, children ignore parental guidance or instruction to maintain "traditional Lozi practices." This shift in practice was said to be caused in part by the introduction of new technologies (internet, cellphones and

television), foreign mass media (movies, music and pornography), inter-ethnic-group marriage, and the promotion of women's and human rights by NGOs and government. In the past, parents of the bride and groom organized marriages between families prior to a woman shifting to a man's natal village. Young women participated in lengthy initiation ceremonies before marriage. According to participants, these ceremonies no longer take place or have been shortened because of the young age at marriage and change in habitation patterns. Focus group participants perceived cohabitation prior to marriage as a key factor contributing to rising rates of divorce, out-of-wedlock childbirth, extramarital affairs and decrease in bride-wealth payment.

In marriage some years back, men used to pay bride wealth to the parents of the girl for marriage. But nowadays you find that men and women are just cohabitating or a girl will just take herself off without the consent of the parents, and once there is misunderstanding she will come back and go again to another man.

– Women's focus group, Kapanda

Bride-wealth payment practices. Bride-wealth payment is considered a significant source of wealth and an important way parents who receive payments secure well-being later in life. Focus group participants observed significant changes in bride-wealth payment practices in recent years. Bride-wealth payments have remained fairly constant: three cattle (or cash equivalent) to marry a woman not previously wed and without children. Otherwise, the payment is two cattle. However, some young men are now unable to pay bride wealth, and in some cases, refuse to pay. Numerous outbreaks of cattle disease in recent years is one of the primary reasons for failure to pay bride wealth. Participants described men who do not follow bride-wealth payment practices as "lazy," "disrespectful" or "poor." A common payment practice for men (or their families) with limited resources is to make what are called "slow payments," or installment payments to the bride's

family over an extended period of time. During a number of discussions, women expressed concern that such gradual payments would be provided with contributions from their daughters, and thus were not viewed as a positive alternative to traditional bride-wealth protocol. Many focus group participants suggested that in the future, bride-wealth payments would only be practiced by wealthier households.

Mobility

Women's mobility in the focal communities is somewhat restricted, as they must seek permission from their husbands if they wish to travel to neighboring villages or to distant markets. While focus group participants expressed the perception that women are more capable of moving outside their villages than 10 years ago, there are concerns about robbery and sexual assault when women travel away from their homes—concerns that prevent some women from traveling longer distances, to markets or fishing grounds, for instance. Traveling in groups helps women avoid being the targets of such violence. Traveling longer distances with heavy loads, in shorter periods of time to reduce risk, requires personal transportation or a hired oxcart or canoe. Many resource-poor women and men do not have the means to purchase or hire such transport options, which limits their capacity to sell produce or value-added goods in larger markets.

Women cannot go outside the village without the permission [of men]. Even to attend meetings, we [women] have to ask for permission. If they refuse we don't go.

– Women's focus group, Nalitoya

Education

Across the focal communities, study participants agreed that opportunities for girls and boys to attend school are more equal compared to 10 years ago. In the past, boys were often socialized to herd the family's cattle and engage in other typically "male" activities. Girls, on the other hand, were initiated into womanhood and prepared for domestic responsibilities, such as household chores, childcare, and water and firewood collection. Parents gave priority to the schooling of boys over girls because girls were not seen to benefit from education. In recent years, however, there has been an increase in the number of children, both boys and girls, admitted into school. Parents are beginning to see that well-educated youth (regardless of sex) are able to acquire good jobs as teachers, soldiers and police officers, for example.

Participants identified several key factors that prevent youth from attending school. For girls, pregnancy is a major concern that leads to dropping out and failing to complete secondary school. A second major factor is the high cost of sending both boy and girl children to secondary schools in or around urban centers. Costs associated with school fees, student travel to and from school, and school boarding costs are prohibitively expensive for many households in the focal communities.

In the past some girls could not continue with secondary school. Only a small number and once a girl reaches puberty, she was pulled off from the school so that she gets married, [but now] the number of girls continuing to secondary school is increasing, even in the situation of pregnancy; the girl can come back to school after delivery.

– **Women's focus group, Nanikelako**

Of particular import is the school re-entry policy that was put into practice in the late 1990s, generally viewed by focus group participants as a positive educational reform, as it has enabled adolescent girls or young women to return to school after giving birth. However, some parents in the focal communities claimed the re-entry policy creates an environment whereby students feel they can return to school after giving birth, and thus contributes to early pregnancy. Research on the impacts of the policy suggests, however, that many young women of school age who have children do not return to complete their education (see Mwansa 2011; Buus 2013).

SUMMARY OF KEY FINDINGS AND OPTIONS FOR ACTION

This final section summarizes the key findings presented above. It then proposes three main options for action to be considered by development and research stakeholders working with women, men and youth in the Barotse Floodplain communities.

Summary points of key findings include the following:

- Woman-headed households comprised 45% of the households in the focal communities, with the majority of the women surveyed identifying themselves as divorced (37.1%) or widowed (26.1%). These statistics are indicators of deeper social and gender issues as detailed within this report and in Cole et al. (2015).
- Women's access to or ownership of land in the focal communities is limited primarily because of virilocal residence norms that require them to shift to their husband's village upon marrying. This practice highlights the importance of engaging men from the start in any agriculture project that targets women as main beneficiaries.
- It appears that harvesting of many natural resources from wetlands and forested areas is highly gendered. Benefits derived from harvesting natural resources are also gendered, with men benefiting more than women, both in terms of access to and perceived value of resources such as timber and fish. This is due in part to the perceived strength needed to harvest resources, as well as the dominant involvement of women in caregiving and home-based (unpaid) duties that constrain their opportunities to collect more highly remunerated resources.
- Overexploitation of fisheries and/or illegal fishing also seems gendered, with men making up the primary group of people who engage in such practices. While poverty levels and the lack of alternative (and viable) livelihood strategies are reasons why men (and some women) fish illegally or overexploit, policies and programs need to acknowledge these gendered aspects.
- Crop and livestock production, as well as benefits derived from their sales, are gendered. Certain crops (e.g. rice) or livestock (especially cattle) attract larger sums of cash when sold.

- Piecework is mostly supplied by resource-poor people as a coping strategy during times of food and cash insecurity. Supplying piecework during periods of agricultural cultivation can impact own-farm production, thus entrenching resource-poor people in a vicious cycle of poverty.
- The analysis of differences in well-being in the focal communities suggests that the factors contributing to women's and men's movement up and down the well-being ladder are complex and thus need to be considered when development projects engage with those at the bottom (but also all rungs) of the well-being ladder. In short, rural communities comprise a heterogeneous group of people with varied lived experiences that reflect a range of factors, including gendered norms and practices.
- It appears that the institution of marriage is gradually changing, particularly with regard to cohabitation practices, bride wealth and perceptions of age at first marriage. The potential social and economic repercussions of such shifts in marriage practices, although not quantified in this study, are profound. As more young women and men cohabit or marry at an early age, there is a greater likelihood of them not completing their education, becoming pregnant and/or divorcing. These outcomes, in turn, are likely to have a significant impact on agricultural production, the health and nutritional status of young women and children, and the economic security of parents (or guardians) who care for adult children who had left their homes at a young age.

Overall, the findings of the social and gender analysis corroborate, augment and nuance those of the secondary literature review. The community-based and participatory approach of the study fostered opportunities for focused discussion and critical reflection on pertinent and, in some cases, sensitive issues (e.g. teen pregnancy and alcohol consumption) facing people in the focal communities. Discussions and dissemination meetings that were built into the overall study design provided an opportunity for participants to articulate specific areas for local action. Moreover,

the study provided important insights into social and gender dynamics that will inform the selection, design and implementation of potential interventions in the area—dynamics that have direct implications for the potential effectiveness of future research and development activities.

From the social and gender analysis research process and data analysis emerged a broad set of options for action, presented below. As the findings of this study serve as a point of reference for designing research and development interventions, the proposed options provide a platform to engage both with people in the focal communities and with institutional stakeholders.

Option 1: Prioritize research and development interventions using gender transformative approaches to advocate for and enhance rights and access to institutions, natural resources, assets, markets and appropriate technologies.

Using a gender transformative approach to understand and engage with people in their context should help ensure that interventions attend to differences in resource access, use and decision making. Importantly, such an approach will also illuminate and actively redress norms and power relations that underlie social inequalities. Gender transformative approaches “encourage critical awareness among men and women of gender roles and norms; promote the position of women; challenge the distribution of resources and allocation of duties between men and women; and/or address the power relationships between women and others in the community” (Rottach et al. 2009, 8).

Gender and poverty intersect in complex ways to limit the mobility of women, in particular, and their access to critical livelihood assets, including land, natural resources and social networks. Lack of land ownership may have important implications for decision making around land use and investments in sustainable resource practices, as suggested by Kwashimbisa and Puskur (2014). This study highlighted explicit differences in perceptions around and capacities of men and women in harvesting natural resources, such as timber, reeds, papyrus and fish. It appears that men are using these resources at higher levels and

for greater financial gains. Thus, as a start, any fisheries co-management initiative, for example, must consider these dynamics when developing interventions that aim to engage multiple stakeholders in managing the fisheries.

Study participants indicated the need for improved access to markets, transport, technical training (e.g. in livestock and crop production and gardening) and technologies (e.g. improved seeds and farm implements)—all of which are defined and used differently by women and men. Women, for example, are more likely than men to harvest wild foods or capture smaller fish species. They are also more likely to perform the postharvest processing of food crops and natural resources. And they face greater constraints than men in selling cash crops, vegetables and fish products outside of the community due to lack of transport and market access, among other reasons. Interventions that aim to fill the gaps between women and men often fall short. It is critical to work with both women and men to develop actions to tackle the harmful norms, practices and power relations that create inequalities or shape women’s involvement in activities or circumstances that are disempowering or less profitable.

Organizations designing interventions that target women with the intention of improving their food and economic security need to reflect on the ways in which gender influences how certain resources or assets are used. An intervention to promote conservation farming practices, for example, must consider that the majority of women in this context do not own or control the land they cultivate. Women produce particular types of crops, typically with limited access to labor, inputs or markets. Initiatives can begin, for example, to work with men, women and traditional leaders to address land access issues more publically and across multiple levels within the Barotse Royal Establishment and other relevant agencies. Without such efforts, women’s control over or access to resources, knowledge and technologies will continue to be poor. Interventions that address underlying causes of gender inequality are more likely to bring about better, lasting development outcomes for all.

Option 2: Enhance community and stakeholder capacity to effectively manage dynamic shocks and stressors. As shown in the literature review and the empirical study, Western Province is characterized by high levels of poverty, limited infrastructure (e.g. markets and schools) and a steady decline in natural resources. Women and men who occupy the lowest rung of the well-being ladder are highly vulnerable to shocks and stressors that restrict access to food or income sources, especially during the hungry period. Driven by inadequate or lack of alternative livelihood opportunities during certain periods of the year, including during the fishing ban, people rely on coping strategies like illegal harvesting. This results in fish stocks declining further, for example, and perpetuates a vicious cycle. In addition, women who are particularly constrained by a lack of assets and by other institutional, social and cultural barriers resort to engaging in piecework labor that can be exploitative, rely on briefcase buyers when selling their produce, or practice high-risk behaviors (e.g. fish for sex).

Working to transform structures and institutions that most often constrain resource-poor and marginalized groups' capacities to innovate and adapt is important, ensuring these structures and institutions are equitable and enabling in nature. Research and development activities in the Barotse Floodplain can engage a multitude of stakeholders at various levels to determine how best to support rural women, men and youth in ways that develop their capacities to innovate and adapt to shocks and stressors. Implementing agricultural research and development interventions that strive to benefit women and men equally depends on support from a range of government, development and research organizations, as well as the private sector, working as a coalition (Kato-Wallace et al. 2015). Collaborative exchanges of ideas, approaches, technologies and learning around gender (among other topics) will have synergistic effects on development outcomes. Coalitions should build on preexisting structures, recognizing that there may be an opportunity to strengthen these structures to enable stakeholders to share knowledge, approaches and technologies more effectively. Study participants, for example, identified inequitable access to and exploitation of natural resources as critical

social and gender issues. Working through village-based committees in collaboration with external stakeholders (e.g. the Barotse Royal Establishment and Department of Fisheries) is one strategy to strengthen and develop co-management approaches and policies to restore habitats and improve natural resource use and regulation.

Option 3: Develop and refine monitoring and evaluation systems to enhance learning and measure change in program outcomes and social and gender impacts across multiple scales and levels. AAS prioritized the development of a comprehensive monitoring and evaluation system and learning framework. The social and gender analysis in the Barotse Floodplain informs the design of this system in three primary ways (see Figure 2). First, the study synthesizes relevant secondary literature to provide longer-term contextual analysis. In this way, the findings help identify trends in gendered resource access and livelihood strategies, as well as policies that underlie development outcomes for women and men. Monitoring contextual factors that, for example, affect decision making and livelihood and coping strategies is critical in order to make timely adjustments to interventions (Béné et al. 2015) in quickly evolving and complex settings and to assess changes in gender equality at multiple levels of intervention.

Second, the social and gender analysis informs selection of key indicators used to measure substantive change in relation to agricultural development interventions in the floodplain. As Mosedale (2005, 31) observed, indicators used to measure impact of, say, women's adoption of conservation agricultural practices may have "little or nothing to do with sustainable impacts on gender inequality." Measuring impacts on gender equality and improvements in well-being requires measuring a program's contribution to change processes over a longer period of time than conventional monitoring and evaluation systems. It also calls for blending qualitative and quantitative indicators and methods, to assess change and provide key insights into the various dimensions that drive change processes (Morgan 2014). The findings of the social and gender analysis highlight multiple factors that influence gendered decision making and livelihood outcomes.

Specific indicators may include, for example, perceptions of women's and men's roles and household decision-making powers; women's and men's control over household assets, income and expenditures; women's and men's access to and utilization of natural resources; and perceptions of school participation for girls and boys.³⁸

Third, it is important to recognize the contribution of monitoring and evaluation to cultivating a culture of learning, across levels and scales. The social and gender analysis applied a "blended learning" approach that engaged stakeholders to learn for action, in action and from action (see Sarapura Escobar and Puskur 2014 for more details). When multiple stakeholders operating at multiple

scales (including women, men and youth in rural areas that a program aims to benefit) become involved and part of the process, a much richer monitoring and evaluation system is developed—one that enables research to act as a mechanism to empower people and build capacities to innovate and adapt (Douthwaite 2002). The collective articulation of the Barotse hub development challenge, together with engagement of multiple stakeholders working in the Barotse Floodplain and focal communities throughout the social and gender analysis, is intended to cultivate an ethos of collaborative learning and lasting commitment to improving gender equality and development outcomes for women and men in the Barotse Floodplain.

- ¹ A hub is a geographical space (e.g. a province containing districts, communities, and the people who live and work within and across these spaces) that AAS engages within to generate knowledge, share learning and address a collectively owned development challenge.
- ² Aquatic agricultural systems are those where production in natural freshwater and/or coastal ecosystems contributes substantially to people's livelihoods.
- ³ For information on AAS, refer to <http://www.cgiar.org/our-research/cgiar-research-programs/cgiar-research-program-on-aquatic-agricultural-systems/>.
- ⁴ See <http://aas.cgiar.org/where-we-work/zambia> for a complete list of institutional partners.
- ⁵ The diagnosis and design team was responsible for leadership during development of the Barotse hub development challenge. In addition, the diagnosis and design team members work as an AAS channel of communication in their respective organizations and build a guiding coalition prepared to work together to tackle the hub development challenge.
- ⁶ During a stakeholder consultation workshop held in 2012, participants articulated a joint commitment to tackling the hub development challenge. The workshop was attended by 45 representatives of various stakeholder groups, including fishers and farmers, the traditional authority, nongovernmental organizations, researchers, government departments, and the private sector.
- ⁷ Gender and equity is a core theme of AAS. For more information on AAS thematic research areas, refer to <http://www.worldfishcenter.org/what-we-do/research-areas>.
- ⁸ The data presented in this subsection comes from the Census of Population and Housing 2010: National Analytical Report (CSO 2012a), unless otherwise indicated.
- ⁹ The population of Zambia at the time of the last national census in 2010 was 13,092,666 (CSO 2012a). The World Bank (2015a) estimates a total population of 15,021,002 in 2014.
- ¹⁰ This increase reflects an annual growth rate of 1.7% (CSO 2012a).
- ¹¹ Gross national income per capita based on purchasing power parity (PPP) rates in constant 2011 US dollars.
- ¹² In 2010, the GINI index for Zambia was 57.5, compared with 42.1 in 2003. The GINI index measures the extent to which the distribution of income or consumption expenditure among individuals or households within an economy deviates from a perfectly equal distribution. A GINI index of 0 represents perfect equality, while an index of 100 implies absolute inequality.
- ¹³ Age dependency ratio is the ratio of dependents, or people who are younger than 15 or older than 64, to the working-age population who fall within the range. The ratio is calculated as the proportion of dependents per 100 members of the working-age population (World Bank 2015a).

- 14 In Western Province, Silozi was the main language spoken by 69.6% of the population in 2010, with Simbunda spoken by 10.1% and Siluvale spoken by 5.1% of the population, among others (CSO 2012a). Lozi are the dominant ethnic group in Western Province. Over 50% of the population indicated they are Lozi in 2010. Other groups include Mbunda, who made up 14.7% of the population in 2010; Luvala, who comprised 6.4%; Nkoya, who made up 4.7%; and Chokwe, who comprised 1.2%. Many other ethnic groups reside in Western Province (see CSO 2012a, 68).
- 15 The Barotseland agreement was subsequently annulled by President Kaunda in 1969. The Barotse Royal Establishment and the broader Lozi population continue to insist it is relevant. See <http://www.barotseland.info/Agreement1964.html>.
- 16 The title of king was initially granted following independence, revoked, and re-granted some years later.
- 17 Why this is the case remains debatable. Cole et al. (2015) argue that in the rural Zambian context, many women do not have individual access to land because of residence norms most ethnic groups follow, including Lozi. Virilocal residence has become the primary type of residence followed by both patrilineal and matrilineal groups; thus a woman typically shifts to her husband's village upon marrying, leaving the land she inherited from (most likely) her father idle or for cultivation by male kin.
- 18 Simwinji (1997) finds that around 60% of households report involvement in fishing, while Turpie et al. (1999) estimate 54% of all households participate in the sector.
- 19 The ILUA (2008) estimates that forest covers approximately two-thirds of the total land area in Zambia (66.4% or 49,968,170 hectares).
- 20 From 1965 to 2005, Western Province lost an estimated 2% of forested area per year (see Vinya et al. 2011). For a discussion of charcoal production in sub-Saharan Africa, see Seidel (2008).
- 21 In 2009, 36.6% of girls were readmitted to school after giving birth, down from 42.8% in 2005 (CSO 2012b).
- 22 In Zambia, per pupil expenditure (PPE) in primary education as a percentage of gross domestic product per capita is 5%, lower than the median PPE in primary school for lower-middle-income countries, which is 14% (EPDC 2014b).
- 23 In 2010, 5.8% of Zambian students in grades 5–7 left school due to pregnancy, increasing to 11.5% for grades 8–9, and dropping to 4.1% for grades 10–12 (CSO 2012b, 8).
- 24 See Ministry of Health National Health Strategic Plan (NHSP) 2011–2015.
- 25 The maternal mortality rate in 2002 was 729 deaths per 100,000 live births, declining to 280 in 2013. The infant mortality rate dropped from 98 (per 1000 live births) in 2002 to 55.8 in 2013. The under-five mortality rate declined from 152 per 1000 live births in 2002 to 87 in 2013 (World Bank 2015a).
- 26 http://www.unicef.org/zambia/5109_8457.html
- 27 See the Marriage Act, Part II, No. 10(ii), Chapter 50 of the laws of Zambia.

- ²⁸ These data is derived from the Zambia Demographic and Health Survey (DHS) for 2013 and are fairly consistent with DHS figures for 2001–2, which indicate a median age at first marriage of 24.3 years for men and 19.2 years for women in Western Province (CSO et al. 2003, 2015).
- ²⁹ Although woman-headed households tend to be disadvantaged and poorer compared to man-headed households in line with “feminization of poverty” arguments, some studies report differing or more nuanced interpretations of poverty and gender dynamics (see Buvinic and Gupta 1997; Fukuda-Parr 1999; Chant 2010).
- ³⁰ The diagnosis and design team consisted of representatives from a variety of partner and other stakeholder organizations. Additional detail on the process and criteria for selection of the 10 focal communities in the Barotse Hub is provided in AAS (2013, 7–8).
- ³¹ The criterion for determining man- and woman-headed households was the same used by the Central Statistics Office (CSO) of Zambia: The head of household is the person who is considered the head by other family members. The social and gender analysis team included two CSO officers, who collected this data along with GPS coordinates for each household.
- ³² These findings on household size are in line with the 2010 population census data, which indicates an average household size in Western Province of 5.0 (CSO 2012a).
- ³³ The 15 women involved in polygynous relationships reflect the second wife of the 15 men presented in Table 2.
- ³⁴ *Sefa-sefa* are large, heavy monofilament drag nets used primarily by men. Women tend to use mosquito nets, which are also designated illegal fishing gear due to the small mesh size.
- ³⁵ See Dierksmeier et al. (2015) for an inventory of strategic initiatives related to natural resource management in the focal communities.
- ³⁶ Participants also highlighted the need to address these social and ecological resource issues in collaboration with external stakeholders (e.g. Barotse Royal Establishment and Department of Fisheries). Members in other communities focused primarily on changing marriage patterns (e.g. increase in divorce), education and child welfare, and healthcare access and outcomes.
- ³⁷ *Nshima* is the traditional staple food, typically made from cassava or maize or a combination of the two.
- ³⁸ Annex 1 provides examples of indicators of gender transformative change.

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ANNEX 1. MEASURES OF GENDER TRANSFORMATIVE CHANGE

Measures of gender transformative change could include the following (adapted from Morgan 2014):

Changes at the individual level

- changes in one's assets or earnings or livelihood practices (indicated by changes in time allocation or greater involvement in activities socially assigned to the opposite sex)
- changes in knowledge or awareness of certain agricultural technologies
- behavioral changes
- changes to an individual's attitudes, values, beliefs and expectations about gender.

Changes in relationships at the household level

- a decrease in incidence of family conflict
- an increase in spousal or family communication or in joint decision making among partners
- more equitable treatment of children.

Changes in relationships beyond the household

- increased support among community members
- expansion of social networks
- increased rate of participation in agricultural cooperatives
- increased incidence of natural resource management committees.

Changes in norms and structures

- partly captured when there are changes in rules or laws (e.g. changes in bride-wealth payments)
- changes in societal attitudes (e.g. captured by asking people to respond to the statement "My community agrees that women should own productive, agricultural assets such as cattle, plows and fishing gear").



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About the CGIAR Research Program on Aquatic Agricultural Systems

Approximately 500 million people in Africa, Asia and the Pacific depend on aquatic agricultural systems for their livelihoods; 138 million of these people live in poverty. Occurring along the world's floodplains, deltas and coasts, these systems provide multiple opportunities for growing food and generating income. However, factors like population growth, environmental degradation and climate change are affecting these systems, threatening the livelihoods and well-being of millions of people.

The CGIAR Research Program on Aquatic Agricultural Systems (AAS) seeks to reduce poverty and improve food security for many small-scale fishers and farmers depending on aquatic agriculture systems by partnering with local, national and international partners to achieve large-scale development impact.

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